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THE INCIDENCE OF ECLAMPSIA IN BOMBAY

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HISTORIC

Eclampsia, in some denomination or other, is known from immemorial ages. It would be no exaggeration to say, that of all nations of the world the Hindus first turned their attention to the study of disease and the means of its alleviation. The Vedas are undoubtedly the most ancient of written records and the Ayurveda or science of life has references to diseases common to pregnant women.

Though we fail to come across a typical description of eclampsia, yet we find in the history of the Ayurvedic system of medicine in India that several diseases of the female were known to Susruta. About this sage,—Kaviraj Nagendranath Sen Gupta of Calcutta in his Ayurvedic System of Medicine, writes as late as 1919, "In one department,—Midwifery, the world has advanced very little beyond the stage to which the branch of medical science was carried in Susruta's times" (?).

The belief at the time was that if during pregnancy the *vayu* (one of the forces that regulated health) was excited, redness of complexion, swelling, whirling of the head, twitchings and sleep were the sequelae". The excited *vayu* was controlled by sweet cooling and saline medicines, by *sweda* (appliances for producing perspiration) cerebral purgatives, enemata, both kinds entering and affecting at the very outset to that part of the stomach where digestion goes on." We see from this quotation that Susruta and others had conceived the idea of intoxication of the gravida and advocated sedative and eliminating treatment three hundred years B.C. Hippocrates, the father of medicine knew of convulsions of pregnant women

and believed that they most often occurrred in women who had headaches and a tendency to sleep.

Among the villagers in India, eclampsia was attributed to evil spirits, to the evil eye (*dusta*), to the wrath of the moon or of the stars and what not and the poor victims were subjected to various treatment including tortures. It is unfortunate that even now,—among the backward classes such ideas should still prevail.

That pregnant women were prone to some kind of intoxication in the latter months of pregnancy was known in India much before the Portuguese domination, is evident from the fact that the pregnant were subjected as a routine to treatment from the seventh month and venesections were freely performed in the gravida. The practice became very popular during the Portuguese rule and this old traditional custom still prevails, particularly among the orthodox Christian folks of Bombay.

The Prelude

It is highly desirable that some consensus should be reached as regards the causation of eclampsia, for until this is achieved the present wide diversities of opinon as to the treatment of eclampsia will continue to exist.

So far, we are all agreed that eclampsism or eclampsia is an acute morbid condition, which makes its advent during pregnancy, labour or puerperium, and that it is a complex syndrome met with only in the gravida. But the genesis of eclampsia, however, remains in a nebulous state. The specific cause of eclampsia is undoubtedly pregnancy, and several secondary factors some known and others unknown contribute to its causation. These factors constitute a long chain, many links of which are still missing and until these are found the nebulous state is likely to continue.

Our great handicap has been the differentiation of convulsive uraemia from eclampsia in the gravida admitted to our hospital. We are convinced that a great confusion occurs in the diagnosis of these two conditions which does lead to numerous statistical and prognostic errors. The convulsive crisis of uraemia and the convulsive crisis of eclampsia cannot be differentiated clinically. The very same symptoms may appear in both. Clinically a rise of blood pressure, albuminuria, oedema, feeling of malaise of headache, of dimness of vision, of heartburn, epigastric pain, vomiting culminating in convulsions, in sequence present themselves, nor can the coma that follows be differentiated in any way. The ordinary changes in the urine do not help to separate the two syndromes.

Unfortunately, pressure of work and insufficient laboratory facilities have prevented us to investigate every case biochemically or biophysically.

The diagnosis of convulsive uraemia cannot be arrived at without the two principal details, *viz.* (1) the assessment of blood urea and (2) the scrupulous anemnesis of the patient with reference to previous kidney lesions. Two clinical symptoms, however, are of some diagnostic value (a) the pallor and the accentuation of the second aortic sound in the convulsive uraemia and (b) the red flushed complexion of the eclamptic as compared to the pale lemon hue of the uraemic gravida. Sedlitzky lays great stress on these two symptoms and one of us has found them fairly constant in his cases.

The Material

Our material consists of consecutive cases of eclampsia admitted to the Wadia Maternity Hospital, Parel, Bombay. This hospital is the largest maternity institution in India with 150 beds opened to all the communities, but mainly intended for the relief of the mill-hands.

During the years 1930 and 1936 (June) 27372 pregnant women were admitted to the hospital for antenatal treatment and labour and out of these 142 came in with eclampsia. The incidence of eclampsia in our series, therefore, was 0·51%.

There has been a great variation in the incidence of eclampsia in different countries during the later years; the pendulum swinging between 0·2% & 0·98%. The habits of the people, the nature of diet, the climatic changes and the antenatal care are evidently the factors that influence the incidence of eclampsia in various countries. We have attempted to study how far these factors influence the incidence of eclampsia in Bombay.

The Habits and the Diet

We are inclined to think that eclampsia is most often the disease of the gastronomers and that irregular habits in life, unwholesome and indiscriminate diet have a great bearing on the development of eclampsia. Almost all our patients with eclampsia were well nourished, developed and stout and some of them were those who would not stay in the hospital, when advised at their first visit to the antenatal clinic for fear of starvation.

It is common knowledge that pregnant women fed on a diet rich in albumins and salts are oftener the victims of eclampsia and we believe that the incidence is greater when the liver is deranged or when there is a history of "hepatism" in the family.

It has been also stated that the incidence of eclampsia is greater amongst the meat and fat eaters than amongst the vegetarians. To ascertain how far this statement applied to our patients we attempted to find the incidence of eclampsia in different communities with particular reference to their diet.

Communities

Our series consisted of 22,345 Hindus, 3395 Christians, including Anglo-Indians, 1467 Muslims, 69 Parsis, 41 Jews, 51 Sikhs, and 4 Japanese. The incidence in each community is shown in Fig. 1.

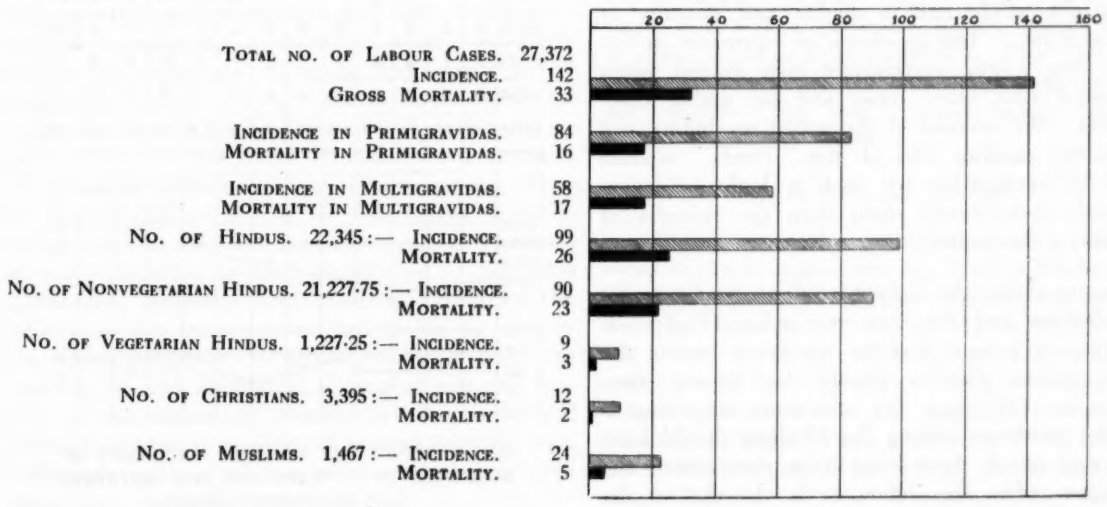
The number of gravidas in the minor communities is so small that a comparison of the incidence in all the communities is not justifiable. We have, however, attempted to ascertain the incidence in the three major communities.

The bulk of admissions to our hospital is of Hindus, about 50% of whom are mill-hands. On going into the detail of the diet of the Hindus admitted to the hospital we were surprised to note that only 5% or 1117·25 were pure vegetarians and that 95% or 21227·75 were non-vegetarians, in the sense that they are allowed to eat fish, eggs, chicken and mutton, but as a matter of fact very few indeed could afford such dainties for their daily food.

The diet of an average Hindu vegetarian admitted to the hospital may be said to consist of rice, dal, wheat, bajree or jwari, vegetables, oil, tea, condiments, sugar or gur, milk and fruits; that of a non-vegetarian differs from the vegetarian in that she takes eggs, fish or chicken or mutton once a week or two.

It has not been possible for us to find out the quantity of each of the constituents of the diet consumed daily, nor their caloric value, but if we were to judge from the average monthly expenditure on diet alone the quantity and the quality of the daily food consumed by the average mill-hand

Fig. 1



appears to us, on the whole, insufficient and poor. A family with five children spends from rupees fifteen to forty-five a month for their food. Even if we were to take the average of rupees thirty a month, which we presume would be rather high, each member of the family would get annas 2·3 per day, and how much wholesome food could they obtain for it? Leave alone the fish, eggs, mutton etc.

In our series of 22345 consecutive cases of labour among the Hindus, eclampsia occurred 99 times *i.e.* 0·44%; 90 times or 0·42% among the non-vegetarians and 9 times or 0·8% among the pure vegetarians. The great majority of the Christian patients admitted to the hospital were of the poor class of East Indians and Goans. The diet of these people ordinarily consists of rice, fish, meat, vegetables, milk, butter, oil, condiments etc; but the staple food of the poor is rice, fish often salted, meat, vegetables, bread or chapati, condiments, pickles, and salt. The quality of the diet on the whole is poor. The incidence of eclampsia in this community was 0·35%.

The Muslim women admitted to the hospital were either wives of the mill-hands or of the poor labourers. Many of these observed the "Purda". The staple food of this class is rice, meat, ghee, vegetables, wheat and salt; but the actual scrutiny of their diet, by one of us, convinced us that it is not on the whole rich in quality and quantity of meat and fats. The incidence of eclampsia in this group was 1·55%, surprisingly high indeed when compared with other meat and fat eating communities. We wonder if the sedentary habits and insufficient outdoor life of the "Purda" women could be responsible for such a high incidence. Evidently some factor other than the richness of the diet is the cause.

In our series, the highest incidence was amongst the Muslims and the pure vegetarian Hindus. It is surprising indeed that the incidence among the non-vegetarian Hindus should be greater than among the Christians; but still more surprising is that the incidence among the Muslims should have been very nearly three times more than among the Christians, when the difference in the diet of the two is practically negligible. Moreover an average Christian takes some times at least some toddy, some kind of wine or spirits whereas the Mahomedan women never take any.

On the face of the evidence collected by us we are inclined to maintain our views that irregular habits, indiscriminate and unwholesome diet are more likely to be exciting factors in eclampsia than a regular mixed diet of meat, fats etc.

Meteorological Alterations and Climatic Changes

It does not appear to us that the meteorological alterations and climatic changes in Bombay affect in any way the incidence of eclampsia. Bombay has, practically, three seasons in the year. The cold, the hot and the damp season (monsoon). If we compare the incidence of eclampsia in the various months of the year or in the three seasons we find no appreciable difference. The number of labours begins to increase from July onwards and reaches the maximum in October, but inspite of the increased number of confinements in the months of August, September and October the incidence of eclampsia is comparatively low. Fig. II illustrates

Fig. II.

YEAR.	JAN.	FEB.	MAR.	APR.	MAY.	JUNE.	JULY.	AUG.	SEPT.	OCT.	NOV.	DEC.	TOTAL
1930	0	0	1	1	1	2	1	1	2	1	0	3	13
1931	2	1	0	1	5	2	0	2	3	4	3	3	26
1932	4	3	3	2	2	2	2	1	1	1	2	2	25
1933	1	1	1	0	1	1	2	0	5	6	1	2	21
1934	3	2	2	2	0	0	0	2	1	1	2	3	18
1935	5	1	4	2	1	4	2	1	1	3	3	0	27
1936	4	3	0	2	3	0	0	0	0	0	0	0	12
TOTAL	19	11	11	10	13	11	7	7	13	16	11	13	142

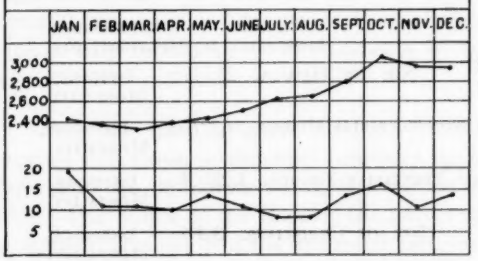


FIG. II SHOWS THE MONTHLY INCIDENCE OF ECLAMPSIA IN 6½ YEARS AND THE OBSTETRIC AND ECLAMPTIC CURVES.
O.C.—OBSTETRIC CURVE. E.C.—ECLAMPTIC CURVE.

our findings. The eclamptic curve is seen to be irregular throughout the year.

Antenatal Care

In our series 127 cases of eclampsia were admitted as emergencies (not booked for confinement nor those who attended the antenatal clinic) and only 15 from among the booked cases; but these attended the antenatal clinic once only for the purpose of booking, at the sixth or seventh month and never more. Those who attended the antenatal clinic with early signs of toxaemia never developed eclampsia. All cases of eclampsism detected at the antenatal clinic were advised immediate admission to the hospital and when admitted rarely developed eclampsia, though many delivered prematurely of still births. We can trace only three such cases that developed eclampsia. One had a mild attack and delivered spontaneously a full term child; one was in her seventh month, and probably had a damaged kidney, she died. The third was in her eighth month, she had few fits but responded to treatment and delivered at term spontaneously. We would, we think, be justified when we say that out of 142 cases of eclampsia, 139 were emergencies and only 3 were under treatment at the antenatal clinic; but if they could be admitted to the hospital earlier they might not have developed eclampsia.

A careful antenatal supervision of the gravidas by experienced obstetricians and the co-operation by the gravidas are essential in every hospital to reduce or rather to eliminate the incidence of eclampsia. Many a time some predisposing factor or factors can be easily detected and dealt with in-time. One of these is the intra-abdominal pressure Paramore in 1910-11 in his Huntarian lectures created the conception of the intra-abdominal pressure which lead to the view that this pressure regulates in some measure general metabolism. With his subsequent extensive and masterly researches he postulated the neo-mechanic hypothesis of eclampsia. Encouraged by this hypothesis we directed our attention to the abdominal distension and the tension of the abdominal muscles in every case and found that a great majority of women affected with eclampsia were primiparas women who upto pregnancy had been perfectly well, but in whom the abdominal wall was tense. Most of them were young and muscular, leading active life. Some of them were short statured, with shortnecks, coarse features and a drum shaped abdomen with marked deviation of the fundus uteri to the right; the fundus uteri in some being well under the right costal arch.

Anomalies of size, shape and position of the uterus in the primigravida may also contribute towards the increase of the intra-abdominal pressure during the later months of pregnancy in small bellied women. One of us (1) was particularly interested in these two types of women and was able to collect twenty-one cases of eclampsia among the primigravidas belonging to the above groups.

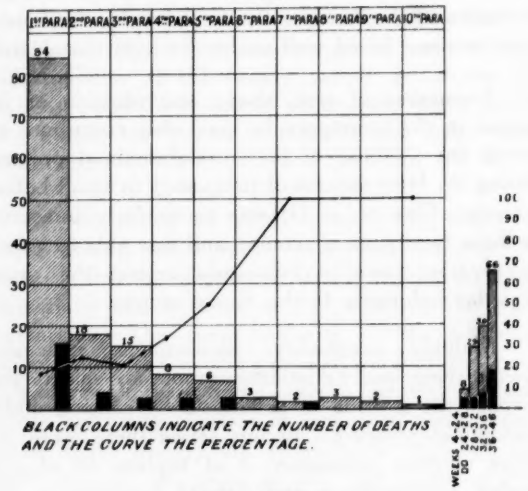
Multiple pregnancy, hydramnios, concealed haemorrhage and hydatidiform mole are said to predispose the gravida to eclampsia by causing undue abdominal pressure. In our series there were 336 cases of twin pregnancy, 2 of triplets, 68 of concealed haemorrhage and 126 of hydramnios, but none of these developed eclampsia. Thus our findings would appear to be in conflict with Paramore's theory but a mere enlargement of the abdomen need not necessarily increase the intra-abdominal pressure. The resistance of the abdominal wall to the distension and the distensibility of the uterus are important factors in the increase of the intra-abdominal pressure. We could not unfortunately ascertain the intra-abdominal pressure in these cases, but one case, not included in our series, came under us very recently with eclampsia. She was a primipara in her eighth month of gestation of a twin pregnancy. The abdominal wall was very tense, so tense that palpation was not possible. She was a short bellied type of patient mentioned above.

The Parity and the Age

In our series the proportion of the primigravidas to the multigravidas, admitted to the hospital, was 1 to 3·8, but the largest number of eclamptics were primigravidas, 84 out of 142 or 59·81%. On the other hand the incidence of eclampsia decreased with parity and age. Out of 84 primigravidas 73 were between the ages of 16 and 22, 7 between 24 and 28, two of 30, one of 32 and one other of 35 years. The age of the multigravidas ranged between 20 and 40 years. Ours youngest multigravida (fourth para) was 21 years old and the

oldest (tenth para) was 40. Fig. III illustrates our findings.

FIG. III.



THE ADVENT

The advent of eclampsia was as follows:— Antepartum 62 times, intrapartum 51 times and postpartum 29 times. When the onset was antepartum the type was often severe, less so when the onset was intrapartum and mild when postpartum.

Eclampsia is not known to occur before the 24th week of gestation. Our earliest case was at the end of the 24th week. Eight cases occurred between the 24th and the 28th week and four of these died; 29 cases occurred between the 28th and the 32nd week and of these four died; 39 cases occurred between 32nd and 36th week and six patients died and 66 cases occurred between the 36th and 40th week but only nineteen of these died.

Eclampsism has been rightly described by Sictz as a drama in four acts, eclampsia makes the fifth, which often closes the scene with a tragedy. We are convinced that more tragedies occur when eclampsia makes its advent antepartum and many more, indeed, when it forces itself before the ovum is mature. Fig. III illustrates the tragedies that beset the mother at different periods of gestation.

SIGNIFICANCE AND PROGNOSTIC VALUE OF SYMPTOMS

The *blood pressure* in pregnancy is certainly the most valuable guide to the derangement of the general metabolism of the gravida. A systolic B.P. of 115 to 125 m.m. may be said to be normal with our gravidas in Bombay but any rise above 125 should be taken as a sign of disturbance of the metabolism and be carefully investigated. It is held by some that a high B.P. in the gravida has a grave prognostic significance and that the mortality in eclampsia is greater when the B.P. reaches 200 m.m. or more. Our observations, however, do not confirm these statements. The highest systolic pressure in our patients was 250 and yet both the mothers and the children survived. One patient, however, died with a systolic pressure of 220 but on the other hand many more died with a systolic pressure under 150 m.m.

We attach more importance to the diastolic B.P. and to its ratio to the systolic pressure. Among our eclamptics the highest systolic B.P. was 250 m.m. and the lowest 110. The highest diastolic was 150 m.m. and lowest 65.

The severity of the eclamptic fits does not seem to us either to have any relation to the rise of the B.P. for the largest number of fits occurred with our patients with a low B.P. One of them had 35 fits when her B.P. was 105/65 whereas one other with a B.P. of 250/150 had only four fits.

Oedema in pregnancy is considered by some as a precursor of eclampsia. In our eclamptics oedema was present in 59·8% of cases. Also oedema was found in numerous gravidas who did not present any signs of toxaemia nor did they develop eclampsism; but on the other hand we came across serious cases of eclampsia in whom oedema could be hardly detected. Space does not permit us to discuss at length the significance of oedema is pregnancy. We shall only limit ourselves to eclampsia and say that the significance of oedema in eclampsia is of much less importance than that of the other symptoms.

Albuminuria is found in a great number of pregnant women. The quantity is insignificant at the start but needs to be carefully watched for the increase, and if kept down by the accoucheur eclampsia rarely occurs. All our eclamptics had albuminuria, some slight and others alarming in quantity. The greater the quantity of albumin the more severe were the symptoms and sooner the

fall in the quantity of albumin the quicker was the amelioration of the symptoms. The persistence of albumin after the crisis varied from 3 to 15 days according to the severity of the onset, but invariably the urine was clear during the puerperium.

Eclampsia is often accompanied by a rise of temperature. In some of our cases the temperature rose as high as 104° between the fits. The rise of temperature in eclamptics is attributed by some to the great muscular energy spent during the fits, but in epilepsy similar muscle energy is spent and the temperature hardly rises. On the other hand many of our patients with 20 or more fits had no rise of temperature at all but several others with three to six fits had a rise upto 100° or more. In other cases temperature was noticed only during the comatose stage. We are inclined to think that the rise of temperature in eclampsia is often of cerebral origin but many a time the infection of the lungs does give rise to the temperature. The appearance of jaundice and tenderness of the liver in the eclamptic are in the majority of cases grave symptoms which lead to a fatal termination. Cases in which the liver is seriously damaged always have an atypical course, convulsions rarely occur, but the patient invariably dies of coma.

After a long and continued experience we feel that any one symptom of eclampsia is of not much significance nor of any much prognostic value by itself. The severity of the case can only be judged from the conjoint manifestations, intensity and duration of the symptoms. These are, the excretion of the urine or the renal function, the B.P., the frequency and duration of fits and consciousness of the patient.

The index of renal function is the quantity of urine excreted during the crisis and the quantity of albumin contained in the urine. Increasing oliguria tending to anuria is always a bad omen.

We have already stated that the B.P. in itself, is not of much significance. The stability of the B.P. and its decrease are favourable symptoms, but its rise during the crisis is of grave prognostic value.

Long and repeated fits at short intervals indicate a grave intoxication and a prolonged coma is still more serious. It indicates the severity of the lesion of the central nervous system. The table shows the relation of the symptoms.

OEDEMA	NO. OF CASES	MORTALITY
Nil	58	13 (56·8%)
Moderate ...	64	15 (23·4%)
Marked	20	5 (25%)
Total	142	33

ALBUMIN	NO. OF CASES	MORTALITY
Nil or traces	25	8 (32%)
Moderate or below two grms.	86	6 (7·9%)
Loaded or above two grms.	31	19 (61·2%)
Total	142	33

NUMBER OF FITS	NO. OF CASES	MORTALITY
From 1 to 5	72	11 (15·2%)
From 6 to 10	38	9 (23·6%)
From 11 to 15	10	3 (30%)
From 16 to 20	8	1 (12·5%)
From 21 to 25 and more ...	14	9 (64·2%)
Total	142	33

SYSTOLIC B. P	NO. OF CASES	MORTALITY
100 to 120	10	8 (80%)
121 to 140	32	6 (18·7%)
141 to 160	51	7 (13·7%)
161 to 180	30	7 (23·3%)
181 to 200	11	4 (36·3%)
201 to 220	5	1 (20%)
221 to 250	3	nil

DIASTOLIC B. P.	NO. OF CASES	MORTALITY
60 to 80	21	5 (23·8%)
81 to 100	61	14 (22·8%)
101 to 120	50	11 (22%)
121 to 140	9	3 (33·3%)
Above 140	1	nil

THE TREATMENT

Our treatment has been always expectant. Accouchement force or Caesarian sections were never advocated, but artificial help was required 17 times. Forceps applied 12 times to shorten the

second stage of labour, craniotomy was performed 4 times on dead children and version once for malpresentation.

In some cases the Dublin method of treatment was advocated but the majority, in the later years, were treated by Stroganoff's method, variously modified. The results were the best when only the original Stroganoff treatment with the rupture of the membranes was used.

The Mortality

The mortality in eclampsia still continues to be high and with the exception of a few workers who claim to have a very low toll in their private practice, it varies from 8·5% to 25% in different countries. In our series the gross mortality was 23·2%. It was lowest amongst the primigravidas and the highest among the multigravidas. It was also the highest between the 24th and the 28th week of gestation and gradually decreased as the gestation advanced to term.

The mortality in different communities varied very much indeed. The Hindus had the highest mortality, 26%, Muslims came next with 20·8% and the Christians last with 16·6%. Among the Hindus the gross mortality in the pure vegetarian was 33·3% whereas in the non-vegetarian it was 25·5%.

The severity of the disease was greatest among the vegetarian and non-vegetarian Hindus and the mortality among them was 42·3% in the primigravidas and 46·8% in the multigravidas, 11·1% among the primigravidas and 22·2% among the multigravidas, of the pure vegetarian group.

Although the incidence of eclampsia among the Muslims was the highest, yet the mortality in them was much lower than among the Hindus; whereas the incidence of eclampsia among the Muslims was about 3 times higher than among the Christians, the difference in the mortality between the two communities was only 4·2%.

Summary

The running comment offered on the individual collections of data in our series renders further elaborate review superfluous. However, a summary of these may serve to crystalise discussion.

(1) The mass incidence of eclampsia in our series of 27372 consecutive labour cases was 0·51%.

(2) The highest incidence was among the young primigravidas and the lowest among the multigravidas.

(3) Irregular habits of life, unwholesome and indiscriminate diet appear to us to have a greater bearing in the development of eclampsia than a regular mixed diet of meat, fats, salt etc.

(4) Meteorological and climatic changes do not seem to influence the incidence of eclampsia in Bombay.

(5) The earliest advent of eclampsia was at the 24th week of gestation. The mortality was the highest between the 24th and 28th weeks and gradually decreased as gestation approached the 40th week. The greatest mortality was amongst the Hindus and the lowest amongst the Christians.

(6) Eclampsia occurs only in pregnancy. The earlier the pathological changes in the general metabolism of the gravida are detected the more favourable is the prognosis.

(7) With better knowledge of the physiopathology of eclampsia and with active antenatal care the convulsive form of eclampsia should be rare.

(8) The occurrence of eclampsia in a gravida who has been under care during the whole antenatal period is a reflection on the attendant.

(9) The best results are obtained by conservative treatment.

(10) Operative measures to terminate pregnancy should be condemned.

(11) Anaesthetics are detrimental, especially those that produce anoxaemia.

THE ACTION OF *BRIHAT KASTURI BHUSAN* ON FROG'S HEART

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The action or the effect of a drug on heart is studied by perfusion of Ringer's fluid* containing the drug in suitable proportions. Generally, when the heart is being perfused with Ringer's solution, a small amount of the drug is injected either directly into the heart or into the rubber-tube carrying the cannula for the heart. In this case, the drug circulates through the heart for a short time and its effect is either not noticed unless the concentration is fairly high or passes off presently so that the after-effects may not at all appear. Another method is to perfuse the same fluid repeatedly through the heart. The great drawback of this method is that the pH of the fluid varies within a short time, so that the effects of the drug on heart are vitiated by changes in pH concentration. For these reasons, I have not adopted the above methods but have allowed the drug to perfuse through the heart for longer and varying periods of time insomuch that the effects of the drug have gradually reached the maximum and then the drug is washed away by perfusion with Ringer's solution. In the course of this washing the after-effects are noticed and the various phases through which the heart passes before it recovers completely are recorded.

The method of perfusion is given below. It will be noticed that the various devices have been invented to keep the pressure of fluid as constant as possible, for the heart beats fluctuate to a very great extent with slight changes in pressure.

Fig. 1 is the diagram of the apparatus used for perfusion. It consists of 2 cylinders, A & B, of uniform bore and graduation and provided with stop-cock. A contains Ringer's saline and B contains the solution of the drug in Ringer's saline. A & B are connected by rubber tubes C & D to the perfusion cannula F. A T-tube is inserted in the course of both C & D (not shown in the diagram) for draining off the solutions from A & B. A is fastened to the stand M and B to a graduated stand N by the clamp O which is fixed to a spiral P inserted within the stand N. The spiral can be moved up and down by the lever Q. The level of liquid in B is indicated by a signal B^1 attached to a rod fixed to the stand N. In consequence of this arrangement the cylinder B can be moved up and down so that the level of liquid contained therein may remain stationary at the point incidated by the signal B^1. The rubber tube D leading out from B is connected to a glass tube provided with a glass stopcock, the other end of the glass tube being connected by rubber tube to the cannula F. A circular brass disc with graduations at the rim is fitted to the stopcock (*vide* E in the diagram) at each edge of which is

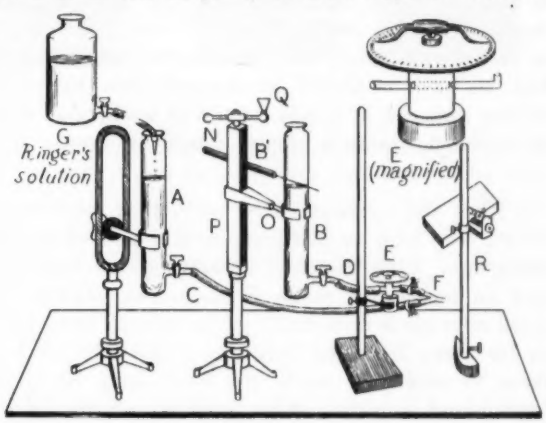


FIG. 1.

attached a brass piece pointing to the scales on the brass disc. When the stopcock is wide open, the brass piece at one end points to zero. When the stopcock is moved on either side of zero, the outflow of liquid through the glass tube is restricted. If the

* Bayliss' formula for Ringer's solution for the heart of frog. p. 221, Bayliss: Principles of General Physiology, 4th Edition.

level of liquid in B is kept at a constant height and if the pointer attached to the stopcock is fixed to a particular reading on the scale mentioned above, then the liquid flowing out of the perfusion cannula kept at a constant position will always be and is also found to be the same. The frog is placed on a Palmer's crank myograph with a bigger corkboard than usual and a screw arrangement at the base for turning the myograph slowly from side to side. The T-piece carrying the myograph is fixed to a device of mine already published. This device which has been a little modified enables the myograph lever to be brought gradually to the tangential position by rotation of the myograph, against the drum. This device is indicated as R in Fig. 1 and can be seen also in the photograph.

Modus Operandi.—A & B are filled with Ringer's solution. Their stopcocks are then opened out so that the tubes C & D upto the cannula F are filled with the solution without any air-bubbles being left in them. Now the height of the level of liquid from A through the cannula for the period of a few seconds is measured carefully when the stopcock of A is opened out completely. The outflow of liquid from B is then measured for the same period after its stopcock is also fully opened out. If there be any difference in the rate of outflow, and if the rate of outflow from B be greater, then by regulating the stopcock E, the outflow from B is made the same as A. If A is found to have a greater rate of outflow, its position should be changed with that of B, for the stopcock E should remain in connection with the cylinder having a greater rate of outflow.

After the apparatus has been thus adjusted a pithed frog with its heart exposed is placed on the myograph. One branch of its aorta is then ligatured and an incision is made in the other branch. A small opening is then made in the inferior vena cava as far away from the heart as is possible. When these incisions are made the heart may be freed from blood quickly. After washing off the blood with Ringer's solution, the cannula is thrust into the small opening and a fine glass tube is inserted into the incision in the aorta. The height of the cannula is then noted and the levels of liquid in A & B are then placed at a height greater than that of the cannula by 1″ to 1½″; for it has been found that the heart of frogs works best at a fluid pressure of 1″ to 1½″. The stopcock of A is then opened out and Ringer's solution is allowed to perfuse through the heart. The Ringer's solution in both A & B is aerated from time to time when it is being circulated through the heart with the help of a glass-tube connected by a rubber-tube with a mouth-piece. The level of liquid in A is kept constant by connecting G which contains Ringer's solution with A and adjusting the outflow from G with the outflow from A. The level of liquid in B is kept constant by the method mentioned above. When the Ringer's solution circulates through the heart, it begins to beat and within a short time the beats become normal and tracings are recorded. Now B is opened out and A shut off immediately. The features of the heart-beat are not usually changed by shunting off the outflow from A to B. But if any change is noticed, the normal features are restored within a short time, provided the rate of outflow from B is kept constant. After these adjustments are made, the drug solution is added to B and the heart is perfused with this diluted drug solution for a period of time and tracings are taken. In this way the effects of *Brihat Kasturi Bhusan* on frog's heart were studied.

This drug, as the name implies, is a preparation of musk used by Kabirajas. It is used as a stimulant for heart.

Results of Experiments

1. On perfusion with 5 mgm % solution the heart of a frog (weight 90 grams) showed very considerable augmentation without any acceleration. On washing with R the augmentation diminished but was maintained for sometime. The effects. therefore, appeared to be quite lasting.

2. On perfusion with 6·5 mgm.% solution the heart was augmented but to a much less extent than in (1). This augmentation was not maintained throughout the period of perfusion, although the heart remained regular. This drug was introduced when the beating of heart was slow and not quite regular. On the drug being introduced the normal rate and rhythm of the heart were restored and there

was augmentation at the outset, as is mentioned above. On the drug being washed away by R, the heart again became slow as before. (Wt. of the frog—85 grams).

3. On perfusion with 7·5 mgm.% solution the augmentation of the heart was still less and the heart was gradually slowed. The augmentation also was not maintained towards the end of perfusion. (Wt. of the frog—80 grams).

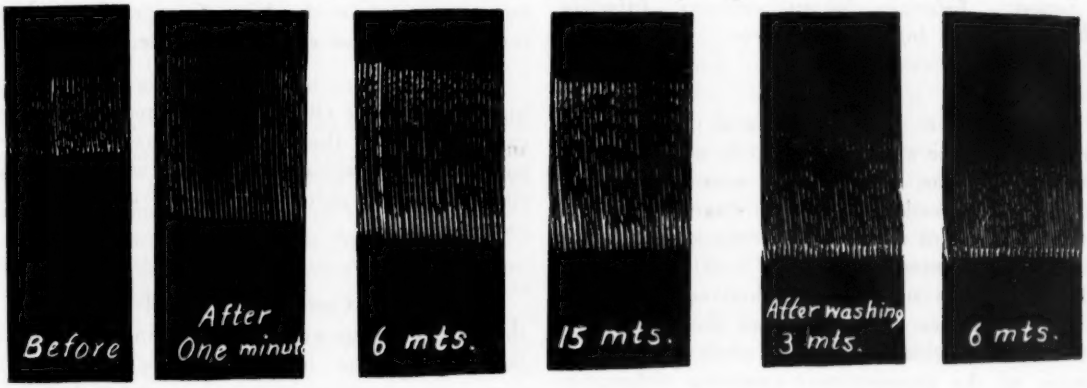
4. On perfusion with 9 mgm. %, (*vide* curve III), 14 mgm.% and 18 mgm.% solutions the heart was quickly augmented to a considerable degree and this augmentation was maintained without diminution till the end of perfusion. On washing with R the augmentation disappeared with each of the solutions. (Wt. of the frog—80 grams).

5. On perfusion with 12 mgm.% solution the heart of the frog showed appreciable augmentation for sometime. The augmentation then diminished but was still maintained till the end of perfusion. On washing with R the beats became less vigorous and slow (Wt. of the frog—80 grams).

Discussion of the Results

It is evident from the above that the drug is a very good stimulant from about 9 mgm.% to 18 mgm.% solutions. At lower doses the augmentation produced is short-lived. If 12 c.c. be taken as the amount of blood in a frog weighing 100 grm., then 9 mgm.% solution would correspond to a dose of $9 \div \frac{100}{12}$ *i.e.* 1·08 mgm. for injection. The corresponding dose for injection into human beings would then be $1{\cdot}08 \times 100$ mgm. *i.e.* 108 mgms. or 0·108 grm. The dose may be varied from 0·108 grm. to 0·216 grm.

Curve III – Effect of Brihat Kasturi Bhusan (9 mgm.% sol.) on frog's heart.



CIRRHOSIS OF THE LIVER IN NORTHERN CIRCARS (SOUTH INDIA)

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(Continued from January, 1937.)

TOXIC CIRRHOSIS

(A) SUBACUTE TOXIC CIRRHOSIS OF INFANTS

Synon: Infantile biliary cirrhosis; Infantile cirrhosis of liver; Infantile liver; etc.

DEFINITION

A progressive and rapidly fatal disease commonly seen in the children of middle and rich class vegetarian Hindus, between the ages of 1 and 3 years, characterized in the early stages by a progressive, persistent and painless enlargement of the liver, irregular intermittent fever and constipation, and in the later stages by gradual contraction of the liver, jaundice enlargement of the spleen and ascites. Histologically, the liver shows a subacute necrosis of the parenchyma, extensive obliterative lesions of the smaller divisions of the hepatic venous tree and replacement fibrosis; attempts at regeneration of the hepatic parenchyma are usually not marked.

INCIDENCE

Though the disease takes a high toll of life among Indian children, the exact incidence of the disease was difficult to work out on account of the absence of any statistical information either in the death returns of the municipality (*vide* Appendix 6, Table II,) or in the clinical or autopsy records of the hospital.

In a series of 1100 children investigated in the Medical Department of the King George Hospital, Vizagapatam, enlargement of the liver was found in 158 cases (*vide* Appendix 6, Table I), of which 28 (2·5 per cent.) were due to the so-called *infantile biliary cirrhosis*. The relative incidence of this type of cirrhosis in a series of 50 cases of cirrhosis of the liver autopsied in the King George Hospital, was found to be 4·0 per cent. (*vide* Table, Appendix 2).

The incidence of the disease is probably much higher than these clinical and autopsy statistics indicate, as most of the affected children never receive treatment in hospital and it was well nigh impossible to obtain permission for an autopsy in fatal cases.

AETIOLOGY

(*a*) *Race, Caste and Social Position*: All the cases occurred among Hindus, especially Brahmins of the middle and rich classes, only one case occurring in a rich *marwari* family and another in a *kapu* family. No cases came from either Anglo-Indian, Christian or Mahomedan families, although the disease was reported to be prevalent in Calcutta in these classes (Green-Armytage, 1926; Mukherji, 1929). It may be worthy of note here that no typical case of the disease was seen during the last four years of this investigation in any of the children of the poorer classes, in whom dietetic irregularities and gastro-intestinal disorders were extremely common (*vide* Appendix 5).

(*b*) *Age and Sex*: The disease was commonly seen in children between the ages of 1 and 2 years and never beyond the age of 3 years.

In a series of 37 cases, 8 were between six and twelve months; 21 between one and two years; and 8 between two and three years.

A slight preponderance of the male sex over the female (23 were male and 14 females) was noted.

(c) *Heredity*: There was evidence to suggest that the disease is familial, as it was not rare to obtain a history of deaths from similar affection, in other children of the same family. A transmission of the disease through some of the female members of the family has been suggested (Mukherji, 1923; Narasinga Rao *); though I have not been able to verify this statement, it would be worth while to investigate this aspect of the problem further. Whether this familial incidence of the disease is due to any "tissue proclivity" on the part of the liver or to any abnormality (toxins) in the mother's milk deserves further consideration.

(d) *Geographical distribution*: The disease is seen in all the districts of the Northern Circars and is more common in towns than in rural areas.

Pathogeny

The several theories that have been put forward, from time to time, to explain the causation of the disease since it was first brought to the notice of the medical profession in India in 1887 by Sen, are briefly reviewed in Appendix 4. The role played by dietetic errors forms the main theme of most aetiological theories.

(i) *Chronic Alcoholism and Kala-azar*: The views that chronic alcoholism in parents (*vide* Mukherji, 1922) and kala-azar in children (Castellani and Chalmers, 1919) are responsible for the disease, receive no support from the present series, as in no case was a history of the former obtained and the latter is practically unknown in the Northern Circars. Moreover, as I shall point out later under morbid anatomy, the histological picture of the liver in the disease under discussion is unlike that seen either in chronic alcoholism or kala-azar.

(ii) *Malaria*: A malarial aetiology of the disease is similarly untenable in the absence of histories of attacks of malarial fever or positive blood examinations, either for malarial parasites or chronic malarial changes, in the present series of cases; moreover, malarial pigmentation of the organs was not evident in both the cases in this series which came for autopsy.

(iii) *Syphilis*: Most of the workers on *infantile cirrhosis* exclude syphilis from among the probable aetiological agents of the disease. Positive Wassermann reactions of the blood and stigmata of congenital syphilis were, however, present in few cases; but the rapid course of the disease, the poor response to therapeutic anti-syphilitic measures, the histological picture of the liver (suggesting a subacute toxic cirrhosis) and the failure to demonstrate spironema pallida in sections of the liver in any of the autopsied cases investigated (*vide* Appendix 8), strongly suggest that syphilis is not an aetiological factor; but it is difficult to say whether it could be regarded as a predisposing factor in those few cases in which there was a suggestion of congenital syphilis.

(iv) *Dietetic errors*: An investigation into the dietary of the children affected with the disease showed no remarkable difference between their food habits and those of normal children of the same age, caste and social position (*vide* Appendix 5). All the children were breast-fed and most of them were getting cow's milk to supplement mother's milk. Patent and tinned milk-foods and excessive amounts of sweets, biscuits or chocolates were given only in rare instances (3 cases). Starchy food in the form of rice was first given between the eighth and twelfth months.

The importance of dietetic errors in the causation of the disease is generally overstressed and very often the fact is ignored that careful enquiry will elicit the existence of similar errors in many of the normal children of the same class. A dietetic investigation in 1100 normal children (*vide* Appendix 5) attending the Out-patient Department of the King George Hospital, showed irregularities such as: overfeeding, irregular feeding, feeding with unsuitable articles of food, etc., in most cases and no case of the disease in question was seen in the poorer class children, in whom these dietetic irregularities were most common. Hence while the importance of dietetic irregularities in predisposing to the disease cannot be denied, it is difficult to be sure, in the present stage of knowledge of the disease, that they act as direct cirrhogenic agents.

* Unpublished observations of the late Dr. M. Narasinga Rao of the Anatomy department, Medical College, Vizagapatam.

The view that the familial incidence of the disease is due to deficient quantity and defective quality of milk of the nursing mother, resulting from poor health (Mukherji, 1922), is only speculative and lacks scientific confirmation. Though it has been reported that breast milk of the Brahmin woman has a high fat content (Forsyth, 1924), it is difficult, in the absence of any confirmatory evidence, to assess the importance of this finding. How far a deficiency of vitamins in the mother's diet influences the endocrine system of the foetus in utero (Green-Armytage) and thus predisposes to the disease, has again not been scientifically studied.

(v) *Toxic causes*: The irregular intermittent fever and leucocytosis in the early stages of the disease, its progressive nature, rapid course, and invariably fatal termination in cases studied in this series, suggest that the disease is of the nature of a subacute toxaemia. The extensive obliterative lesions of the hepatic venous tree, similar to those observed in the yellow atrophy cirrhosis (toxic cirrhosis), forming the centre of the histological picture of the liver in this disease (*vide* Appendix 8), suggest that the toxin has a predilection for the hepatic venous tree.

Evidences of a vaso-motor disturbance, such as pallor, the subjective sensation of heat which makes the child prefer to lie on the ground (Mukherji, 1922) and the soft hepatomegaly observed in the early stages of the disease, point to the possibility of the existence of a vaso-motor imbalance in the liver produced by the toxin; disturbance of this vaso-motor mechanism may precipitate a vaso-spasm of the hepatic venous tree and dilatation of the portal venous tree in the liver and peripheral vaso-constriction (Ramachandra Rao, 1933).

No evidence however exists about the nature of the hypothetical toxin and its mode of action.

The presence of a toxin which circulates in the maternal blood in intrauterine life and continues to be given to the child after its birth, either in the breast milk or in the dietary (Forsyth, 1924), the chemical irritants (ptomaines?) of gastric origin (Gibbons, 1890), and other gastro-intestinal toxins, presumed to be the cause of the disease, lack clinical or experimental confirmation.

(vi) *Parasitic Causes*: Neither the clinical nor the autopsy investigation in the present series of cases showed any evidence of parasitic infection of the liver. Among the five cases in which the liver was investigated histologically only one showed a pericholangitis and cholangiolitis, which had supervened on a subacute toxic cirrhosis.

In conclusion, the pathogenesis of the disease is still very obscure. The observations of several workers on the aetiology of the disease, based mainly on clinical findings, are generally speculative and sometimes conflicting; except in rare instances, the clinical findings in such cases were not verified at autopsy. The clinical and autopsy findings in the present series of cases, suggest that the disease is of the nature of a subacute toxaemia; the evidences are more in favour of an exogenous toxin (which is probably peculiar to India), probably dietetic, rather than an endogenous or metabolic toxin. A congenital susceptibility of the liver probably prepares the ground for the action of the toxin, which, as I shall point out later, produces vascular lesions around the hepatic venous tree, necrosis of the hepatic parenchyma and replacement fibrosis.

Morbid Anatomy

Very little has since been added to the description of the morbid anatomy given first by Gibbons in 1888-1890, based on a study of 5 cases. Gibbons concluded that the disease is a peculiar type of 'biliary' cirrhosis, in which the fibrosis begins in the tissues around minute bile ducts, causing an early obstructive jaundice, while portal obstruction follows only late in the disease. An interlobular and intercellular distribution of fibrous tissue, a marked destruction of hepatic cords and an increase of minute bile ducts in the newly formed fibrous tissue, are some of the other important features described by him in the liver.

As the disease chiefly affects the children of the middle and rich classes, permission for an autopsy in fatal cases was extremely difficult to obtain. The rarity of autopsy material has no doubt greatly hadicapped the study of the morbid anatomy of the disease and probably explains also the paucity of literature on this aspect of the disease.

The following description is based mainly on

an intensive study of five cases described in detail in Appendix 8.

THE LIVER:

(*a*) *Gross Anatomy*

The liver was enlarged, yellowish or yellowish-green in colour and weighed 11-14 ounces. The capsule was slightly thickened and surface finely granular. The organ was firm and maintained its shape. The edges were sharp.

The organ cut with resistance, the cut surface was deeply bilestained and finely granular; a translucent, greyish-white connective tissue network enclosing small yellowish or yellowish-green rounded islands of parenchyma was evident on the cut surface (*vide* Plate I, Appendix 6). These pseudolobules varied in size in different specimens, but in no case were they comparable to the hyperplastic nodules seen in fully developed toxic cirrhosis in adults; they were small in all instances. There was a slight increase of periportal connective tissue. While the finer divisions of the portal spaces containing the portal vein radicles were clearly evident, there was a scarcity of the terminal divisions of the hepatic vein; some of the bigger divisions of the hepatic vein showed thickening of their walls, narrowing of their lumen and areas of scarring around them. One case showed bile staining of the mucous membrane of some of the bile ducts in the portal spaces and microscopic examination in this case revealed a pericholangitis and cholangiolitis.

The gall-bladder showed no noteworthy changes. Gallstones were not present in any case. The orifices of the common bile duct, portal vein and hepatic artery were patent.

(*b*) *Microscopic Anatomy**

(*i*) *The capsule and parenchyma*: The capsule was slightly irregular and appeared thickened due to subcapsular fibrosis.

The parenchymal mantle had lost its normal pattern and was divided into small islands of very unequal sizes by an avascular, non-inflammatory, oedematous connective tissue network; in places, these islands of parenchyma consisted of only a few hepatic cords. The parenchymal foliæ were seen in varying degrees of degeneration; the cell outlines were hazy; the protoplasm was granular and contained numerous pigment particles and lipoid droplets; the nuclei did not stain properly; in places, only the skeletons of the hepatic cords were left.

Attempt at regeneration of the parenchyma in the shape of a nodular hyperplasia was not marked or was only slight; one case, however, showed evidences of active nuclear division and more marked pseudolobulation. Loss of normal pattern, presence of bile thrombi or cylinders in the biliary canaliculi of the hepatic cords, biliary necroses of the central parts of some of the nodules and intralobular oedema, were some of the important features noticed in the pedudolobules. Fatty change was generally sporadic and on the whole inconsiderable.

Haemosiderosis of the organ was slight. Specific stains failed to demonstrate the presence of *Treponema pallida* in the liver in any of the cases.

(ii) *The sinusoidal capillary bed and the reticulum*: Silver impregnation of the reticulum of the liver in all the cases showed: loss of normal pattern in the capillary network, a scarcity of the hepatic terminals due to phlebosclerosis, endophlebitis and even complete obliteration, endophlebitis and partial thrombosis of the collecting or sublobular veins, and collapse, condensation and sclerosis of the perisinusiodal capillary reticulum surrounding the occluded divisions of the hepatic vein. A subdivision of some of the bigger nodules by strands of fibrous tissue permeating from the enveloping connective tissue was frequently seen; in places, the collagenous change of the reticular frame work in some of the nodules became interstitial, closely simulating intercellular cirrhosis.

The Glisson's capsule showed a slight increase of fibrous tissue.

(iii) *The portal venous tree*: Excepting for a crowding of the portal spaces containing the portal venous radicles and relaxation of its walls, the portal venous tree showed no remarkable changes.

(iv) *The hepatic venous tree*: Specific connective tissue stains, elastic stain and silver impreg-

* Photomicrographs illustrating the microscopic anatomy of the disease are shown in Appendix 8.

nation of the reticulum, alike showed extensive obliterative lesions (mentioned above) of the terminal as well as some of the bigger divisions of -the hepatic venous tree.

(v) *The hepatic artery*: The hepatic artery showed no remarkable changes.

(vi) *The biliary tree*: A catarrhal desquamation of the mucous membrane and a consequent occlusion of the lumen of some of the medium sized bile ducts in one case and a pericholangitis and a cholangiolitis in another case were observed.

The impregnation of the hepatic cords with bile pigment, the distension of the biliary canaliculi in the hepatic cords with bile thrombi or cylinders and the icteric necrosis of the parenchyma in central areas of some of the regenerated nodules, suggest imperfect biliary drainage due to an obstruction, probably in the canals of Hering (junctional tubules), in the later stages of the disease.

(vii) *The pseudo-bile canaliculi*: A marked increase of the pseudo-bile canaliculi at the lobular periphery was seen in the case referred to above, in which pericholangitis and cholangiolitis were present; it was probably caused by a true proliferation of the junctional tubules (canals of Hering) due to the superimposed biliary infection. Increase of these structures in the connective tissue network in the other cases was, however, only apparent, being chiefly due to a crowding together of the several persistent (due to a rich arterial supply) divisions of the biliary tree in areas of parenchymal atrophy, as a result of collapse and condensation of the reticular frame work.

(viii) *The connective tissue network*: The connective tissue network separating the islands of paranchyma of varying sizes consisted of fully formed fibrous tissue which was avascular, non-inflammatory and oedematous. The connective tissue bands were, however, not compact and contained, especially in the larger nodes of the fibrous frame work, plenty of elastic fibres.

By means of specific connective tissue stains, including the silver impregnation of the reticulum, it was possible to show that these bands of fibrous tissue surrounded the divisions of the hepatic vein which showed the obliterative changes already referred to; the wider nodes of the connective tissue network also enclosed several divisions of the portal spaces. The connective tissue bands enclosing even the small parenchymal islands had undergone complete collagenous change and the histological picture resembled in places the so-called "intercellular cirrhosis'. The connective tissue network, especially around the larger portal spaces and beneath the capsule, showed elongated or pyknotic nuclei, probably of the endothelial cells of the collapsed sinusoids.

In the case in which biliary infection was superimposed, the connective tissue was also localized around the walled and unwalled bile ducts.

The histogenesis of the fibrous tissue and the nature and evolution of the cirrhosis in this condition are discussed in Appendix 8. The genesis of the fibrous tissue in the liver can be traced to an atrophy and degeneration of the parenchymal mantle around the hepatic venous tree, due to an interference with the free flow of portal blood resulting from the obliterative lesions in the hepatic venous tree, and collapse, condensation and sclerosis of the reticular frame work of the corresponding sinusoidal bed.

Limiting the term 'Biliary' to a chronic inflammation of the bile passages (Rossel, 1930), the appearances seen in the present series of cases cannot be designated under 'biliary cirrhosis' (Gibbons, 1890), as evidences of biliary infection were not present except in one instance; even in this case, the biliary infection was only a later mainfestation, superimposed on a regressing subacute toxic cirrhosis. The pathological appearances of the liver are similar to those described in toxic cirrhosis; but the fine pseudolobulation, and the co-existence of necrotic lesions and scanty regenerative changes in the hepatic parenchyma, suggest that the condition is one of subacute toxic cirrhosis.

Changes in Other Viscera

A complete autopsy report of the changes in the several organs in a typical case clinically investigated is given in Appendix 6. Passive venous congestion of the spleen (*vide* Plate II, Appendix 6), diffuse parenchymatous nephritis,

venous anastomoses between systemic and portal venous systems in the region of colon, kidneys, omentum, etc., enlarged mesenteric glands, oedema of the brain, subserous petechial haemorrhages, bile staining of all tissues, jaundice, anaemia, ascites and oedema of the lower extremities, were important postmortem appearances in this case. The pancreas was normal; the suprarenals showed congestion.

Clinical Features

The onset of the disease is insidious, but when it has established itself the course is very rapid and termination invariably fatal.

(*a*) *The first stage: stage of onset of the disease:** The first symptom often noticed by the parents is usually the inactivity of the child, who becomes dull and morose, often prefers to lie on the ground and has disturbed sleep. Appetite is usually lost, but sometimes it is voracious or there is a craving for abnormal foods. Constipation is often very marked and rarely there is diarrhoea. A low irregular fever is often evident. The skin loses its glossy appearance and becomes muddy.

On physical examination, the child is found to be peevish, and pale. The liver is slightly enlarged (about two finger-breadths below costal margin), slightly resistent to the feel and painless. The spleen is not enlarged.

Except for slight leucocytosis, examination of the blood does not reveal anything abnormal in this stage; examination of the urine and faeces shows also nothing abnormal.

(*b*) *The second stage; stage of definite enlargement of the liver*: Irritability and peevishness of the child are more marked in this stage. An irregular and intermittent or rarely low remittent fever is invariably present (*vide* Fig. 1, Appendix 6).

Constipation is marked and the stools are dirty white in colour.

The conjunctivae show a subicteric tint; the abdomen is prominent especially in the upper part, where few superficial abdominal veins can be noticed. The liver is enlarged—the lower border generally reaching to the level of the umbilicus, and sometimes even beyond it. The surface is smooth or slightly granular, firm and not tender, while the edge is sharp and also hard. Splenic enlargement is generally slight (one to two finger-breadths below the costal margin), if evident at all. Ascites is absent.

The blood shows a moderate leucocytosis with a tendency to lymphocytosis and a fasting hypoglycaemia. The Van Den Bergh reaction shows a latent jaundice (direct, delayed reaction). The fragility of the red blood cells is diminished. Except in rare instances, the Wassermann reactions of the blood of the children and their parents are negative.

Beyond a fair concentration of urobilin, examination of the urine does not reveal anything abnormal. The fat content of the faeces is found to be increased (*vide* Appendix 6) due to its defective absorption.

(*c*) *The third stage; stage of contraction of the liver*: The clinical picture in this stage is one of deep jaundice and cirrhosis with gradually supervening evidences of portal obstruction, consequent to a terminal contraction of the enlarged liver.

The child is usually very peevish and loses all interest in the surroundings. The visible mucous membranes and skin (which is dry) are jaundiced; oedema of the legs and occasionally general anasarca become evident, and the emaciation which may be present is masked by the swelling.

The abdomen is prominent; the superficial abdominal veins are dilated (Fig. 14); the umbilicus is everted; the skin of the abdominal wall stretched; free fluid present in the abdomen. A hard, painless, finely granular and somewhat contracted (compared to the previous stage) liver with sharp and hard anterior margin becomes palpable (about two finger-breadths below the costal margin) after paracentesis of the abdomen. The spleen is resistent to the feel and is usually palpable about two to three finger-breadths below the costal margin.

Cardiac and respiratory embarassment is usually present due to the pressure of the fluid in the abdomen.

* Illustrative cases of the different stages of the disease are given in Appendix 6.

Examination of the blood shows a secondary anaemia with slight or no leucocytosis; fasting hypoglycaemia; normal urea and non-protein nitrogen; diminished fragility of the red blood cells; a delayed coagulation time and a marked bilirubinaemia (Van Den Bergh reaction; direct positive, immediate, strong).

The urine is scanty, deeply bile stained, and contains bile pigments, bile salts, urobilin and a trace of albumin; degenerating leucocytes and bladder epithelium are found in the urine towards the end of the disease.

The stools are acholic and offensive, but show nothing abnormal under the microscope.

The ascitic fluid is a transudate, deeply bile-stained (Van Den Bergh reaction, direct positive, immediate) and gives no definite positive result either on cultural examination or intra-peritoneal inoculation into guineapigs; microscopic examination of the centrifugalised deposit shows lymphocytes and endothelial cells. The Formol-gel test for kala-azar and the agglutination tests with the dysentery group of organisms are negative.

The Wassermann reactions of the blood-serum and ascitic fluid, though positive in some instances (both in the mother and child), are generally negative.

Roentgenograms of the long bones do not show anything abnormal.

Diagnosis and Differential Diagnosis

On account of the painless enlargement of the liver, insidious onset and vague symptoms in the early stage, the disease is often missed in this stage and it is not always easy to differentiate it from other enlargements of the liver. The clinical picture in the third stage is so typical that it is rarely missed in this stage.

The differential diagnosis of the disease is discussed in Appendix 6 & 7 respectively. While it is always easy to differentiate this disease (especially in the second and third stage) from conditions like kala-azar, acholuric jaundice, rickets, Hanot's 'biliary cirrhosis', malaria, catarrhal jaundice, physiological enlargement, etc., in which enlargement of the liver is also present, congenital syphilis cannot often be eliminated without a thorough investigation; the Wassermann reactions of the blood and the results of therapeutic test (anti-syphilitic treatment) often fail in differentiating this disease from the interstitial cirrhosis of congenital syphilis; but the rapid course, the irregular intermittent fever and the deep jaundice, unlike that seen in the latter, assist the differential diagnosis.

Course of the Disease

The course of the disease is generally short and it is rare to see children survive more than 6 to 10 months after the onset of the first symptoms and the enlargement of the liver. An early termination is usual after the onset of ascites.

With the onset of jaundice, the child becomes very peevish and apathetic. Cardiac and respiratory embarassment is present after the onset of ascites and sleep is disturbed at night. An irregular temperature (*vide* Temperature chart, Fig. 2, Appendix 6); the general condition gradually becomes worse; the urine is scanty and stains the bed clothes yellow; the child gradually becomes comatose and dies in a cholaemic state. In rare instances, gastro-intestinal haemorrhage or petechial haemorrhages in the skin are seen towards the end of the disease. Death is rarely due to an intercurrent affection (broncho-pneumonia).

Prognosis

The prognosis of the disease is bad, as it is exceptional to find a genuine case recovering from the disease. A family history pointing to the death of other children with the same disease, an early onset (below one year), and a rapid accentuation of symptoms generally indicate a very bad prognosis. The appearance of jaundice is a bad prognostic sign, as only one case in this series recovered after its onset. Ascites is a grave sign; no case recovered in this series after its development.

Treatment

In the absense of definite knowledge about the aetiology of the disease, treatment could only be empirical and symptomatic. The results of the several lines of symptomatic treatment (*vide* Appendix 6 and Appendix 7) were un-

FIG. 14

FIG. 14. **Sub-acute toxic cirrhosis of infants:** Photograph of a child in the third stage.

FIG. 15

FIG. 15. **Sub-acute toxic cirrhosis of infants:** Photograph of a child in the second stage.

FIG. 16

FIG. 16. **Toxic cirrhosis:** Photograph of the liver showing the coarse hyperplastic nodules on the surface.

FIG. 17

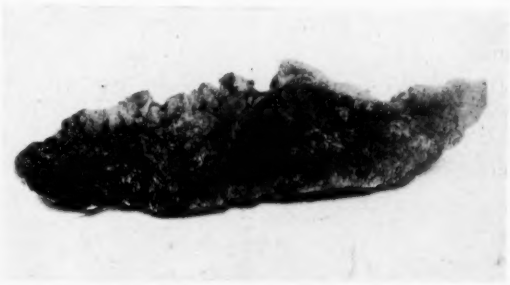

FIG. 17. **Toxic cirrhosis:** Photograph of the cut surface of the liver in the above specimen showing the coarse and irregular pseudo-lobules and scarcity of the finer divisions of the hepatic vein.

FIG. 18

FIG. 18. **Toxic cirrhosis:** *a*—photograph of the liver showing the coarse nodules on the surface and the atrophic left lobe.

b—photograph of the section of the liver in the above specimen showing the wide, irregular, translucent, greyish-white, depressed scars around the big divisions of the hepatic vein (h.v.), which show a narrowing of the lumen.

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FIG. 19

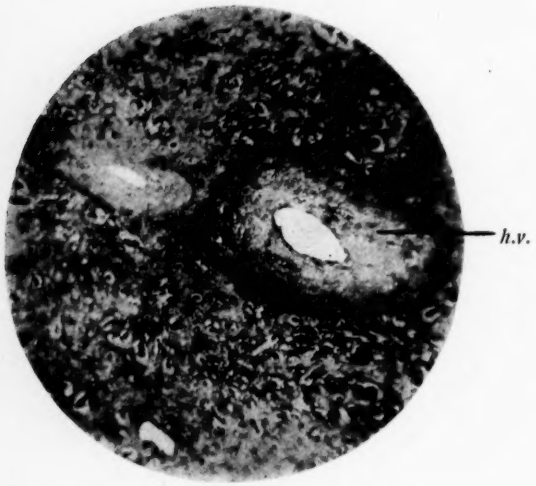

FIG. 19. **Toxic cirrhosis:** Photomicrograph of a section of the liver in FIG. 18 showing the endophlebitis of a collecting vein (sub-lobular vein). Note the atrophy of the hepatic parenchyma around the vein. *h.v.*—collecting vein.
(Weigert's elastic stain; apochromat objective—8 mm.; periplan. o. k. eye piece—4 mm.—Leitz).

FIG. 20

FIG. 20. **Toxic cirrhosis:** Low power photomicrograph of the reticulum of a section of the liver in FIG. 18 showing partial thrombosis of a big branch of the hepatic vein (*h.v.*).
(Foot and Menard's silver carbonate impregnation technique; objective—22 mm., Beck. Ltd.; periplan. o. k. eye piece—4 mm.—Leitz).

satisfactory; neither the change in the diet (skimmed milk—Green Armytage, 1926) nor the administration of drugs (mercury with chalk, intestinal antiseptics, etc.) appeared to have any effect on the course of the diease, beyond a slight and temporary improvement in the gastro-intestinal symptoms. A trial with Liq. Kalmegh co (compound extract of *Andrographis paniculata*), an indigenous preparation (Indian Medical Laboratory, Calcutta), gave encouraging results in the early stages of the disease; after its administration the bowels became regular, the general condition improved and the liver showed diminution in size. But the response to the administration of this preparation in the latter stages of the disease was disappointing, as the improvement was only slight and temporary; one child which was admitted after the onset of jaundice, but without ascites, however, showed marked improvement after the administration of the preparation.

To relieve the pressure effects (cardiac or respiratory embarassment) of ascites, paracentesis of the abdomen had to be resorted to in some cases; but the result of this line of treatment was very bad, as the children became rapidly worse and developed cholaemia, in which state they died.

The other lines of general, hygienic, dietetic and drug treatment adopted in this disease are similar to those followed in the treatment of hepatic disorders in general and hence do not need special description here.

(B) TOXIC CIRRHOSIS OF ADULTS

Judging from the clinical and autopsy experience obtained during the last 4 years, toxic cirrhosis in adults following acute or subacute necrosis of the liver appears to be rare in Northern Circars. Clinical diagnosis of the condition was difficult. In all the four instances, on which this study is based, the diagnosis was made only at autopsy; two cases showed acute yellow and red atrophy respectively, while in the other two instances the appearances were typical of a nodular cirrhosis.

Aetiology

The aetiological factors in this condition did not differ in any way from those described in portal cirrhosis.

Poisoning by cinchophen, phosphorus, trinitrotoluene, tetrachlorethane, etc., the commonly reported aetiological agents of toxic necrosis and consequent cirrhosis, was, however, not found in any of these cases. Judging from the high incidence of syphilis and the low incidence of toxic cirrhosis in this part of the country, it is unlikely that the acute destructive hepatitis, which might be produced by the former, could be regarded as an important aetiological factor in the causation of the latter. But it is probable that the therapeutic administration of arsenical preparations in the treatment of syphilis may be responsible for the condition, as it was not uncommon to see toxic hepatitis and jaundice following arsenical medication. Moreover, in the present series of cases in which the Wassermann reaction of the blood was positive (3 cases), the patients had been treated for syphilis by quacks, who administered crude drugs probably containing mercury and arsenic. The possibility of an endogenous toxin cannot, however, be excluded in these cases, in view of the presence of focal infections, especially in the teeth and intestines.

Morbid Anatomy

The acute yellow and the red atrophic stages need no special consideration here.

The Liver

(a) *Gross Anatomy*

The liver in the cirrhotic stage was normal or slightly below normal in weight (55 and 43 ounces respectively); in one case the organ maintained its shape (Fig. 16), while in the other the left lobe was markedly atrophic (Fig. 18A). The capsule was slightly thickened and the bare area of the liver was adherent to the diaphragm. The edges were sharp and atrophic. The surface of the organ was coarsely nodular (Figs. 16 and 18A), the nodules varying from the size of a pea to that of a marble.

The organ was firm and cut with resistance; the cut surface was bile stained and showed universal coarse and irregular pseudolobules in which there was a marked scarcity of the cut ends of the finer

divisions of the hepatic venous tree (Fig. 17). One specimen showed in addition wide, irregular, translucent, greyish-white, depressed scars around the bigger divisions of the hepatic vein; these divisions of the hepatic vein also showed a narrowing of the lumen (Fig. 18 B). The regeneration was more marked around the portal spaces.

The common bile duct was patent; the gall bladder showed no remarkable changes.

(*b*) *Microscopic Anatomy*:

The characteristic features were the pseudolobulation and the obliterative and sclerotic changes, similar to those described in the previous section, in the hepatic vein (Figs. 19 and 20; and Fig. 29, Appendix 9). The pseudolobules appeared as big masses of hepatic cords with a loss of the normal pattern and with no evidence of hepatic terminals even in preparations specially stained for reticulum (Fig. 29, Appendix 9). Evidences of imperfect biliary drainage (bile thrombi, bile-cylinders and large amount of fine granular bile pigment in the hepatic cords) and pericholangitis (submucous lymphocytic cuffing with marked constriction of the lumen) of the larger divisions of the biliary tree—probably terminal, were evident in one case (Figs. 30, 31 and 32, Appendix 9). The portal venous tree showed no remarkable changes.

Though these findings would suggest that the larger size of the nodules denotes a toxic cirrhosis, such a finding cannot be regarded as a diagnostic criterion, as it was not found in the toxic cirrhosis of children described in the previous chapter; moreover, similar appearances may also be seen in some cases of portal cirrhosis in young individuals with well marked regenerative power in the liver. On the other hand, the obliterative and sclerotic changes, similar to those described by Ramachandra Rao (1933), found in the several divisions of the hepatic venous tree in the toxic cirrhosis of both adults and children in this investigation, suggest that these findings are probably more certain diagnostic features of a toxic cirrhosis.

Clinical Features

The clinical features of the fully developed cirrhosis (*vide* chapter II) and, as pointed out already, the clinical diagnosis of the disease was beset with difficulties. A history suggesting an acute or subacute hepatic necrosis was not usually obtained; jaundice was present in only one instance, in which there was terminal cholangitis.

A high retention of rose bengal dye with a normal glycogenetic function of the liver is said to be a characteristic feature of toxic cirrhosis (Althausen, 1931); such a finding was not present in these cases in which both the functions were impaired.

Prognosis and Treatment

It is evident from these cases that the prognosis is bad. Treatment was only symptomatic and similar to that described under portal cirrhosis.

NOTES ON TUBERCULOSIS OF LYMPHATIC GLANDS

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Amongst others this particular disease is very prevalent in Nepal, and I have done a lot of operations for affections of lymphatic glands and therefore I think, I can say a few words on the causation, course, prognosis and treatment of this particular disease.

In the first place populated locality, ill-ventilated house, unhealthy surroundings, insufficient or unwholesome food especially tuberculous milk and meat, direct contagion, loss of vitality after an acute infectious disease, heredity and constitution play a very important part in the causation of the disease. Children and young adults are specially prone to tuberculous affection of the glands, and old people are rarely affected unless they have it previously. At least in my personal experience I have found girls being more affected than boys; and glands of the neck specially sub-mental, sub-maxillary ones and those of the posterior triangle are much more affected than those of any other parts. Next in role are the inguinal glands; perhaps axillary glands stand first in the role of incidence. Griffith shows that in children three-fourths of the cases of cervical adenitis are due to bovine bacilli. Da Costa believes in the predisposition towards tuberculosis; but it means low opsonin index, *i.e.*, a depressed condition of general health due to individual occupation, habit, residence, convalescence after acute infectious diseases, bad or insufficient food and over exercise.

Modes of infection are many; such as inhalation, swallowing and inoculation. I have seen several patients (apparently quite healthy) affected with enlarged lymphatic glands of the neck. Of course there may be lymphadenitis without tuberculous infection, but this is not very common, and when it occurs on account of absorption of some toxic or infective material from the periphery, *e.g.* lips, teeth, gum, tonsils, adenoids, scalp, ear, nose, throat etc.; the glands quickly subside when the inflamma tory process ceases. In syphilitic lymphadenitis there is first inflammatory enlargement of the chain of glands, usually shotty; besides the surrounding tissues get swollen; later on, the glands become adherent to the skin, and when chronic the affected glands are almost painless. In some cases caseation follows, the skin becomes red and oedematous, sometimes the abscess bursts, or the caseous matter is absorbed or undergoes calcification; but this very seldom occurs.

As regards diagnosis Von Pirquet's or Moro's cutaneous Tuberculin reaction, Calmette's thermo reaction or Wright's opsonin estimation has each of them some diagnostic value; but a negative reaction is not always indicative of the absence of tuberculosis.

Prognosis: Tuberculous glands may get well, may even calcify, but as a rule caseate if left untreated. Radical cure is very rare; often they break down again after healing, and suppurate again and again because of mixed infection. According to Da Costa 'mortality without operation is probably 10 per cent.' I have seen several patients live upto old age with caseating and suppurating glands in the neck, axilla or inguinal region without much appreciable distress. In younger patients the chances of softening are greater than in adults or old men. I have witnessed several patients with chronic glandular enlargement dying ultimately of pulmonary phthisis.

TREATMENT

The first step in the treatment is adopting hygienic measures as far as practicable. Fresh air, sunshine, and fresh food are advocated. If the house is infected or the locality very populated, a change of residence is the most important; if the place is unhealthy, better to send the patient to some

healthier place at once. As far as possible every item of diet should be fresh, such as fresh fruits, milk, cream, eggs, fish or meat, nutritious and must not be over-cooked. The patient must be insisted to remain in open air for at least 4 hours, 2 hours in the early morning and 2 hours in the afternoon. Exposure to natural sunlight if available is the best; if not exposure to ultra-violet rays might be substituted.

Next comes medical treatment, which may be either local or internal.

Local treatment: The affected parts should be kept at rest in the first place; next, any primary source of infection should be properly attended to and carefully treated. Besides application of iodine, belladonna, ichthyol, Scott's ointment and Bier's passive congestion treatment at least help absorbtion to some extent.

Internal Medication: Cod liver oil, Haliverol, iron, arsenic and iodine (specially the organic preparations) guaiacol, colloidol calcium and vitamin D are often used as tonics in order to improve general health and help calcification; that is all; they have no specific action on the bacilli. The injection of Tuberculin either human or bovine according to the nature of infection) is employed by some surgeons as a curative, but plays as a double-edged sword in the hands of a tyro. According to Tardeau and Wright it strengthens the individual's immunity or cause an increase in opsonin index; it may sometimes arrest tuberculous process. It should be started with an infinitesimal dose and injected once a week during the positive phase.

Surgical Treatment: In advanced and suppurated cases complete extirpation of glands is not advisable unless condition improves or wound heals up, because there is danger of secondary infection and spreading cellulitis. Again total extirpation is not always possible or advisable. According to the first principle of surgery when pus has formed it must be let out. Really speaking the abscess does not contain any pyogenic germs, yet it is very difficult to preserve the aseptic condition after opening at the last moment. At any rate if there be fluctuation or skin becomes discoloured there is no good waiting for nothing. Conservative treatment can be relied on almost in all cases to allow the local conditions to clear up. According to some surgeons tubercular abscess should not be opened; they advise aspiration by syringe and filling the cavity with iodoform emulsion. I have tried this method on many occasions, and I was quite tired of the procedure, and I had to open the cavity at last. It was rather simply a waste of time, and I have abandoned it. Next procedure is to open the cavity at the most dependent part, let out the pus, scrape the wall and its cavity by a flushing curette, then purify the wound by hydrogen peroxide, and flush out the cavity with iodoform emulsion and then close the wound with stitches. Often this method fails too. The last alternative is to keep the wound open and let it heal by granulation.

Operation for Extirpation of Glands: In the first place it would not be out of place to say that in operations of the neck A.C. or A.C.E., mixture or rectal anaesthesia of ether and oil is more suited than any other form of anaesthesia.

Most of the surgeons are of opinion that the operation should be done before suppuration has occurred, otherwise there is risk of producing cellulitis of the neck or even disseminating the disease (Choice). According to Dobson "the best incisions are those running obliquely across the neck in the line of natural folds of the skin." But I make my incisions either along the anterior or posterior border of the sterno-mastoid or an U-shaped inverted incision joining the two parallel lines—below the mandible. The superficial fascia and platysma should be divided along the whole length. Small incisions are no good; free incisions must be made and every gland and vessel should not only be felt but actually seen and carefully dealt with. Glands must not be grasped with any sort of forceps, as they are liable to be ruptured on slight pressure; it is better to catch the fibrous tissues in between during separation; but too much pulling would be dangerous because of the under-lying vessels collapsing under tension. Not only the big enlarged or infected glands should be removed but also the smallest ones if infecetd; I mean rather the chain of glands in the affected area in a block, just as is done in cancer operation. I have seen many such glands apparently healthy, but on section they were found

to be full of caseating matter. On the whole the operation is not an easy one, but requires besides other things thorough knowledge of anatomy and careful dissection. Big veins should be shifted either to one or the other side from the field of operation without injuring them; and as a rule they must not be divided, but preserved as far as possible. If not possible they should be divided in between two ligatures or clamps and tied later on with catgut, as there is danger of air entering into the vein and causing sudden collapse. Next, knife should be sparingly used. Blunt dissection is to be preferred; therefore a single blade from a pair of scissors (curved on the flat) is more useful in dissection, and the upper one used for the right side and the lower one for the left. If the capsule of the gland be healthy, it may be opened and the gland shelled out easily. But if diseased the whole thing should be removed in one piece or in as few pieces as possible. If any gland ruptures during manipulation then the whole cavity should be thoroughly washed with an antiseptic lotion before proceeding further. Lastly the wound is closed leaving a drainage at the most dependent part, which is removed after twenty-four or forty eight hours. The wound must be quite dry and bloodless before it is closed; and a firm pressure of a pad of gauze or cotton must be applied over the cavity in order to check haemorrhage or allow blood collecting in the cavity. Usually the wound heals by first intention after complete extirpation, but it might suppurate again and again, especially if any infected portion is left within. I know of a case whose glands were removed for the fourth time of the age of 42, and still he is an earning member of the family and regularly attending to his business. So an operation may be repeated, if necessary, and as often as necessary in addition to general hygienic measures and medical treatment.

A CASE SHOWING CONDITION BEFORE OPERATION

THE SAME CASE AFTER EXTIRPATION OF GLANDS

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EDITORIAL

RACIAL DISCRIMINATION IN THE SERVICES: A FORETASTE OF THE NEW CONSTITUTION

The medical profession in India acknowledges the services rendered by distinguished members of the Indian Medical Service in introducing and developing the western medical science in India. With the advancement of University education, our alumni began to give a good account of their talents in Europe not only by passing the stiffest university examinations in those countries but also by entering the Indian Medical Service, after competing with their British colleagues, with comparative ease. Many of them, on their return to India, distinguished themselves as leaders of the profession in their respective areas. The Indian medical profession was also being steadily organised in the meantime. Then came the Great War when the system of competitive examination gave place to nomination. Inspite of persistent demands of the medical profession in this country, the method of open competition has not been revived, with the result that a larger number of Europeans with ordinary qualifications are entering the Service than before the War.

As a result of the Montagu-Chelmsford Reforms in 1920, although Health and Education portfolios were transferred under Indian Ministers, the Secretary of State promulgated the Devolution Rules in 1923 to safeguard the interests of the I.M.S. by which 268 officers of this, primarily military service were asked to be kept in civil employ. The Lee Commission was sent out in 1924 to further safeguard the interests of the Imperial Services. As a result of their recommendations, a communique was issued in 1928 which, although it admitted that the Service was primarily meant for military duty, forced the Civil Departments to maintain a *war reserve* of 200 officers, of which 134 were to be British and only 66 Indian (or practically 2: 1). The *war reserve* officers were, of course, liable to be called back to the military department if war broke out. Not content with this, another category of officers, called *residuary officers* was asked to be permanently retained in civil employ for medical administration and attendance on the members of the superior services and their families—a purely civil requirement. Through this second door, 102 additional officers, thus making a total of 302, were permanently thrust on the civil departments and the incumbents were assured that nobody would be able to remove them until they retired or took leave of the world. If we leave aside a Leave Reserve of 27½%, 237 posts in civil employ had to be reserved for this service, of which 59 were to be employed

in centrally administered areas and 178 to be distributed in the provinces. The Lee Commission further offered overseas pay and other privileges to the European members of the Service in educational and administrative appointments. The introduction of this racial and communal discrimination has gone so far that recently a very able and distinguished Indian member of the Service has been superseded by a comparatively junior member. From the rules recently introduced for the selection of Indian officers in the cadre, it appears that no Indian will ever have the age-period to aspire to that position in future.

The medical profession in India expected that the Government of India Act of 1935 would wipe out or at least mitigate the racial and service inequities in the provinces, which are to receive what is called Provincial Autonomy (!) from the 1st of April, 1937. Our readers are sadly mistaken if they think that the New Constitution will improve the state of affairs. On the other hand, it sets back the wheel of progress in many respects. To cite one instance, out of a total strength of 28 I.M.S. officers in Bengal at the present moment 22 are Europeans and only 6 are Indians. Under the new constitution, not only all the 28 appointments will remain but attempts are now being made by the Secretary of State to snatch away the three posts of Resident Medical Officers in the Medical College Hospitals, Calcutta, which were thrown open to the Provincial Medical Service, and to reserve the post of the Professor of Ophthalmic Surgery, Calcutta Medical College, for an European member of the Service. So far as our information goes, Indian officers of the Provincial Medical Service and a non-service Indian professor of Ophthalmic Surgery acquitted themselves creditably in these positions. This is provincial autonomy with a vengeance, no doubt.

The Indian Medical Association, with more than three thousand members in over seventy branches and affiliated associations all over India, has all along vigorously opposed the imposition of a Military Service on the civil medical sphere. The plea for keeping a War Reserve is contrary to all considerations, except those of vested interests. What happens in other countries? Do they divert a section of the military service to civil employ? The universities in India are now turning out very able products, many of whom have equipped themselves with foreign training and are now able to stand competition with any British officer. These able men can very well be employed in War Reserve on a small retaining fee, thus contributing both to economy and efficiency. If they could render a good account of themselves during the last Great War, they can do it much better in a future emergency. As a matter of fact, this happens in other countries. Why should it be otherwise in India? The Military Department might well say that they need a certain number of well-trained men through peace time civil organisations. If it needs the help of the civil department, why cannot they depute these men to the provinces at their own cost? We cannot comprehend why the provinces should be utilised as milch-cow for essentially military needs under an enormous economic burden. The perpetuation of this reservation throttles the progress of public health and medical relief by a top-heavy organisation.

There is no necessity for forcing the *Residuary appointments* on the provinces. If a province can now produce its own Prime Minister and other administrators, why should it not be able to produce its own Surgeon-General, Inspector-General of Prisons, Professors and Civil Surgeons? There is no longer any necessity for maintaining the class barriers like the Indian Medical Service, Provincial Medical Service (Upper and Subordinate) and the like. The interests of the Indian medical profession ought to be alike, irrespective of the anomalous services. If provincial autonomy is to prove a boon to the people and not a cloak for perpetuating slavery, why persist in the forced spoon-feeding of the medical services any longer? It is neither fair to the people nor to the Indian medical profession in general.

The argument for maintaining the European element in the services will not stand scrutiny for a moment. The efficiency of a job demands that in all teaching and administrative appointments, the most rational plan would be to advertise for a post and to get the best man available irrespective of race, colour, creed or service interests. Where is the equity in deciding that the European and Indian members of the Indian Civil Service will be half and half while that in I. M. S. will be perpetuated at the ratio of 2 Europeans to 1 Indian? As regards the

necessity of maintaining European officers for the medical attendance of superior services, what happens to the large number of Europeans resident in India who are not employed in Government service. Do they clamour for getting the service man for treatment? Conceding that Europeans would like to be treated by their own folk, which is contrary to experience both in many parts of India and in Great Britain, why can't the European missionary and private practitioners be subsidised and utilised for this purpose? There is no justification for usurping many of the important posts, at an enormous cost to the provinces, under the cloak of this artificial demand in the interests of the European members of the service.

The British Medical Association, which supported the point of view of the European members of the I. M. S., now want co-operation with the Indian medical profession in consolidating their position in India. We ask our readers if any of them is prepared to support this in the face of the recent revelations.

The successive annual conferences of the Indian Medical Association have protested, in one voice against the injustice of thrusting service on the civil sphere, of permanently usurping all the important administrative, educational and civil appointments in the provinces often by men of very ordinary qualifications to the exclusion of efficient indigenous talents and of maintaining a racial discrimination in the services. The issue that arises is a large one and we hope the members of the Indian medical profession will rise to the occasion and signify their protest from every asscociation and platform. It is well that the public and the legislatures take note of this fact and try to undo the wrong that has been and is going to be perpetrated on the eve of a new constitution. The new reforms, if we have to gulp down these injustices, will be nothing but a mockery. We wonder what has now happened of our late Gracious Queen Victoria's proclamation. It seems that memory is very short with our British administrators!

MODERN THERAPY IN GENERAL PRACTICE

SURGICAL SEPSIS

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Definition: A surgical condition resulting from pyogenic bacterial invasion which may require surgical interference.

It is impossible to deal individually the various surgical conditions in a single article which will come under such a broad heading. The range is so wide that it begins from a tiny little furuncle to extensive cellulitis; or from a pyaemic abscess to general pyaemia or even septicaemia. So it will be the aim of this article to deal with the salient features of bacterial invasion of the human body producing different surgical conditions according to the different anatomical situations of the primary focus.

Whenever pathogenic bacteria find lodgement in a particular area, it brings about local as well as systemic changes. The local changes are expressed by the term inflammation. It is worth while to deal with the clinical menifestations produced by local inflammation.

Pain: The pain and its intesity gives us a mere clue to the virulence of the infective organism and some idea of the anatomical site of infection. For instance a streptococcal small abscess will cause more pain than a staphylococcal abscess. It is familiar to all that a subperiosteal gum boil or an apical inflammation of a tooth socket, or a deep-seated whitlow involving bone, will cause intense suffering to the patient. Thus we find it is necessary to take cognisance of this clinical feature from a treatment point of view. Bony involvement always produces nocturnal exacerbation of pain. Subsidence of pain often means control of infection and amelioration of condition leading on to recovery.

Swelling: Its extent, nature, spread, shape and form often gives a careful clinician an idea of the condition that is going to develop, as well as the systemic defect in the man. For instance a rapidly spreading induration be it a carbuncle, deep-seated abscess or spreading cellulitis, results either from a virulent organism or diabetic or renal complication in the patient. We are all familiar with the effects of carbuncle in diabetics. Consequently, to a lay man the diagnosis of carbuncle is likely to strike terror in his mind. It is worth while to examine the patient's urine under such conditions not only to reassure the patient that there is no danger to his life, and also to help the doctor in his treatment. In a known diabetic only a judicious use of vaccine, and cautious use of the knife, will lead to his early cure. On the other hand in a diabetic or an albuminuric injudicious selection of a dose of vaccine or early use of the knife often leads to disastrous consequences.

Redness: In fair-skinned patients the redness may be so intense that it may raise in the mind of the clinician suspicion of erysipelatous condition. If one is hasty in pronouncing his opinion too early and then subsequently changes his diagnosis he might lose the confidence of his client. Erysipelas may set in as a complication in case of an abscess or carbuncle, but very rarely so. It is easily distinguished by a well-defined margin which spreads in varying degree from day to day. Whereas an angry red-looking diffuse blush does not spread like erysipelas, unless there is some constitutional defect; and even then a clear cut margin is always absent. A proper diagnosis not only helps in the treatment, but enables the clinician to form an idea about the prognosis; which, both to him and the patient, is sometimes of far reaching consequence. If a red blush tends to change into a bluish-black hue the doctor ought to be on his guard about the onset of gangrene.

The shape of the swelling gives us an idea about the anatomical situation of the process of suppuration and the nature of the clinical condition. The uniform rounded swelling of a limb with fever and nocturnal exacerbation of pain ought to induce the clinician to keep his eyes open for bony mischief. It is not invariably so, but may be the result of medullary infection. Deep submuscular abscess produces extensive swelling but it is not generally circumferential, that is, equal all round the limb. A deep-seated sub-muscular abscess may, by pressure, cause oedema which gives the limb a circular look. A pointing abscess is generally a superficial suppuration. Whenever a deep suppuration occurs, be it in a limb, the trunk, or any part of the human anatomy, and tends to become superficial it will not have a conical appearance; it will only present a rounded smooth elevation. A pointing and fluctuating small rounded area in a scrotum may be the result of a suppurating haematocele. An enlarged scrotum with a red blush may be the result of filarial infection, as well as the onset of erysipelas, or cellulitis, or extravasation of urine. It may lead to extensive sloughing of the scrotal tissue even up to the testes, leaving them denuded when the whole slough separates. In case of extravasation early incision may save the patient's life, whereas in case of erysipelas it may lead to disaster. Filarial inflammation of the scrotum as a rule does not require surgical intervention. But when suppuration has occurred if the knife is withheld for a long time it may lead to extensive sloughing. Oedema of the scrotum coming on as a complication of kidney disease may sometimes assume a reddish hue from mild infection of the tissues owing to its low vitality. In such cases whether or not to use the knife is a very delicate point to decide.

Fever: The range of temperature and its character often gives us an idea about the causative organism and its virulence. When an infection has occurred a fight goes on between the invading organism and the system. The fever is the manifestation of the fight. A high temperature does not necessarily mean a bad prognosis. If, with the high temperature, there is a certain amount of toxaemia then the seriousness of the condition will depend on the degree of toxaemia. On the other hand a high temperature without much toxaemia only means that the infective organism is of high virulence but the system is fighting it well. When an inflammation has become properly localised, and suppuration has occurred, the temperature may leave or assume a hectic type. In either of these cases it is time for surgical intervention. If the patient refuses to have it he runs the risk of further spread of infection involving a larger area. With completion of localisation, and when an effective barrier has been built up by nature around the focus of infection, if the system has been able to completely control the infection the temperature may disappear. The disappearance is always by lysis. Gradually subsiding temperature will prompt the clinician to wait for his incision or to take immediate step.

If the tension is too great inside, it will be wrong to wait; as the tension will break the barrier the nature had built and cause the infection to spread, bringing about an exacerbation of temperature and repetition of the former clinical manifestations. In such cases it will often be wiser to wait before giving the incision and allow nature to build up a new barrier around the area where the infection had spread. This internal phenomenon will be indicated by a fall in the fastigium and general amelioration of symptoms. When the temperature has completely disappeared it is time for surgical interference provided there is no constitutional contraindication such as hyperglycaemia etc.

Diabetic sepsis requires separate consideration as it is a subject by itself. So also is kidney complication. Now we are more concerned with a healthy subject who has developed a surgical condition.

Toxaemia: A high degree of toxaemia ought to prompt us to keep our eyes open to the possibility of a septicaemic condition which may have developed in the patient in addition to his local inflamatory manifestation. It is not denied that virulent infection can and may produce extreme degree of toxaemia. In all cases it is essential to have the urine examined, and where the urinary secretion has considerably diminished, to keep a daily note of the total quantity of urine passed together with the total quantity of fluid intake. Here a seasonal variation should be taken into account. Intestinal toxaemia may lead to diminished urinary secretion as nature refuses to absorb water from the alimentary canal in which large amounts of toxic material are present

in solution. In such cases you may increase the intake of water and ply the patient with diuretics but he will not respond to your treatment unless and until you have rendered the condition of the intestine sweet.

In all surgical sepsis examination of the urine gives us a better idea about the patient than a blood examination report. At one time it was supposed that a high degree of leucocytosis was an evidence in favour of pus formation. But now we know that the degree of inflammation and systemic reaction are only expressed by increase in the total leucocytes. There may be suppuration with only 8 or 9 thousand leucocytes, whereas a leucocytic count of 30,000 may ultimately lead to resolution of the inflammation without actual suppuration. Where there is doubt as to whether pus has formed or not; and, if pus has formed whether surgical aid is indicated or not, a Schilling count, or Brown's is worth while doing, although it has not been generally accepted by the profession. But for this an expert pathologist trained in such count is essential.

Inflammation: It is well known that the process of inflammation brought about by bacterial invasion is a conservative role played by the individual as a whole in self-defence. Even when there is no manifestation of fever or systemic disturbance the whole body of the individual is taking part not only to combat against the invading organism but also in the process of repair. This may take place after extrusion of the pus and dead tissue either as a natural process, or with the aid of the knife; or it may take place without extrusion of the pus and of necrotic tissue. Resolution of inflammation without suppuration is familiar to all, but even when pus has formed, sometimes,—though rarely,—we see the capacity of nature to deal with the pus not by extrusion but by absorption. There is a popular misconception that if pus is allowed to be absorbed in the system without letting it out it will do damage to the organism of the patient. It is a possibility which one cannot emphatically deny. But nature is intelligent enough to decide when it will be proper and possible to absorb the pus without any harm to the patient. In such cases the doctor's duty is to watch the patient carefully and to guard him against any contingency which may result in inflammation of any organ or tissue in the whole body; that is when temperature is absent, pain is steadily getting less, induration slowly begin to disappear, then inspite of palpable fluctuation, one can afford to wait provided the patient is taking adequate rest and does not do anything to lower his general vitality and resistance, and he is under the supervision of a competent doctor. His feeling of general well being and restoration of all the normal physiological functions of the body should be the criterion for the doctor to judge whether he should advise the patient to wait or ask him to submit to an operation immediately. But it is always best to operate. The risk is abolished and recovery is quick. In the absence of pain, and with gradual diminution of fluctuation, the condition may come to a stand-still position; then the pus can be aspirated out, or small openings are made, their number depending on the area of involvement. It is sometimes seen that with one or two dressings only, the whole cavity is obliterated and the abscess heals in 3 days to a week according to its size. In such cases the pus is generally thin and may be serous in character. If serous, irrespective of the quantity, one dressing (after incision) kept on for 3 or 4 days is able to bring about healing. The individual incisions should be so small as nature can close within that period of time. The needle prick of an ordinary subcutaneous or intramuscular injection closes practically immediately. An incision 1/6″ or 1/4″ will close in 3—5 days. Whether it should be 1/6″ or 1/4″ will depend upon the nature of the contents. Thinner the consistency of the pus smaller ought to be the incision. When serous in character aspiration is quite enough. But if pus is thick, aspirated slough or tissue debris present themselves at the opening, it ought to be made big enough to allow complete evacaution of the cavity of all such material. Evacuation is best brought about by gentle pressure and manipulation. Bleeding occurs which issues from new capillaries in the tissues all round the cavity. All the above phenomenon is most commonly seen in pyaemic single or multiple abscess but is also seen in pyogenic single or multiple small abscesses particularly in cases of children or babies. Many may have seen such an abscess heal in 24 to 48 hours after it has been opened. Therefore it behoves a medical man to closely study a surgical condition and make an attempt to come to a clear judgment and form a close idea about the proper time for surgical interference, which will benefit the patient instead of

doing any harm, and help in bringing about a quick recovery. The profession is engaged in diminishing human suffering and it is our duty to see that instead of lessening suffering we do not increase it; or even expose the patient to imminent danger to life. There are conditions, and they are by far the commoner, in which such close scrutiny is not essential or imperative. But on the other hand cases are seen where the patient's life hangs by a thread, slightest injudicious action on the part of the doctor may put the patient in a dangerous condition nay even death might ensue. Sometimes we see the patient's condition so serious that without surgical interference death is inevitable. In such cases it is justifiable to take the risk of an operation and make a desperate attempt to save the life of the patient with the help of a knife. But in these cases drastic measures are more likely to do harm than good. Circumspect, judicious incisions, in well selected areas, of adequate length, is likely to give him the best possible help. It must have been observed by all, specially those who are engaged in surgical practice, that in diabetic whitlow or cellulitis a rapid spread of infection occurs after incision. Sometimes this necessitates further incision, which is followed by similar spread and often proves fatal. Only in cases where the spread is prevented by incision the prognosis is generally good if the patient does not die from kidney failure or diabetic coma.

From the above general considerations it will be evident that it is not only necessary to correctly diagnose the local condition, but it is also necessary to form an idea about the patient's constitutional condition. To judge about the constitution, examination of urine and its excretion in 24 hours are necessary if not essential. Trace of albumen in the absence of casts is not of much importance and often can practically be neglected. The albumen with casts, specially granular, and diminution of the total quantity of urine passed in 24 hours, needs careful attention to patient's consitution than to local condition. He should first be treated constitutionally to have proper elimination. Not only the urinary apparatus should be looked to, but alimentary canal must be taken into account. In addition to these, if there be any lung condition present that also should receive serious attention. After instituting treatment on the above lines, if no adequate response is obtained, then sometimes it becomes necessary to treat the local condition surgically; both for treatment of the local condition, and as an auxilliary aid to bring about adequate constitutional response by drainage and thereby preventing, or at any rate diminishing toxic absorption. If surgical intervention of the local condition does not improve elimination and thereby diminish toxaemia the prognosis is grave.

TREATMENT

This can be divided under two headings namely local and constitutional.

Regarding local treatment we must bear in mind what we are going to do, and with what object. The various means at our disposal are intended either for determination of more blood in the area involved, as an aid to conservative process of nature by setting up inflammation, or to give relief to the patient by ameliorating pain and sometimes burning sensation, as also to make an attempt to combat local sepsis. For determination of blood at the site of infection we can apply compresses or poultices or various substances *e.g.* starch, bran, linseed, which however have gone out of vogue.

Compress is generally used but it must be borne in mind that the object of the compress is to apply heat from outside as well as to prevent the local heat from radiation into the outer atmosphere. Heat has an optimum temperature at which it is most effective. In the popular mind there is a misconception that greater the heat better will be the effect. Excessive heat, if the skin is delicate, and the tissue vitality is low, will damage the skin. Comfort to the patient ought to be the standard. The degree of temperature of the compress should be such which ought to give comfort to the patient. This temperature will vary under different conditions and in different individuals. If the heat produces burning sensation, instead of boric compress a soothing poultice is more likely to be beneficial. Linseed poultice on account of the mucilage it contains and some emollient substance which is supplied on the surface of the poultice next to the skin, proves a soothing method of applying heat. If the irritation of the skin is great a soothing ointment ought first to be applied to the skin before applying heat in any form. Antiphlogistic preparations available in the market are a convenient method of

substituting compress or poultice. But if any of them contain irritant substances, or strong antiseptics, it produces irritation of delicate skin when continued for a length of time. There is a bark Naluka which is applied in a powdered form rendered into a mucilaginous doughy mass by addition of water. This is very useful but should not be used too long lest it produce irritation of the skin. Compress or poultice left over when cold, does not actually fulfil the object for which it is applied. For this reason when it is found that the compress owing to the anatomical situation of the site of infection and method of application cannot maintain its heat for any length of time, it should frequently be changed no sooner it gets cold. Application of hot-water bag or even an ordinary bottle filled with hot water may be used to maintain the heat of the compress.

Where heat cannot be maintained due to any cause it is best to apply antiphlogistic remedies of which there are so many available in the market. Many people when substituting application of these remedies for a compress advise to renew it at frequent intervals. It is not really necessary to do so. A thick application left over for 24 hours or longer often serve the purpose for which it is applied. It ought to be left over till it is dry and comes easily off itself if sufficiently thick. Compress during day and antiphlogistic preparation applied during night is a convenient method as it may not be convenient or possible to renew the compress frequently during night. There are situations where antiphlogistic preparations are not convenient to apply *e.g.* upper eye lids, lips, labia majora. In these situations heat of the compress cannot be maintained for long; under such circumstances an old fashioned poultice is more effectual. The poultice should be prepared with fine *suji* with plenty of ghee in it. It will be like *halua* without the addition of sugar. The object of applying emplastrum belladonnae is to allay pain with absorbed belladonnae and confine local heat by the artificial coating the medicine will form after drying. But the coating will prevent the doctor to watch the colour of the skin from day to day and to judge when incision will be necessary, and then a proper cleaning of the area becomes very painful to the patient if it becomes essential. Besides these there are various indigenous oily medicinal preparations which are antiphlogistic in their effect and none of them have been observed to produce irritation. They are soothing specially when burning sensation is present; probably owing to their oily character or their ingredients they ameliorate the condition.

To control the sepsis we have at our command application of ultra-violet rays and diathermy heat. The rays of ultra-violet lamp have a certain power of penetration but not much. For this reason it will not help all class of cases.

Diathermy heat not only apply surface heat but heats the tissues underneath and in some cases are capable of killing some of the organisms inside the infected area, or at any rate devitalises them sufficiently to prevent their multiplication. For this reason it should be applied daily in such doses as will not injure the tissues. Ultra-violet rays applied too frequently in injudicious doses produce surface erythema which is often explained as a beneficial effect, but it is doubtful whether it is really so.

Diathermy current if too strong will do more damage to the tissues than improve the condition. Cutting with a diathermy knife as a novelty is quite commendable, but certainly by damaging the margins of the incision lengthen the period of healing. It is advocated that electric current destroys the organisms and so benefit the patient. When a current is passed only for a short time, in such strength, as to enable the point to cut, we get only the cutting effect and not much destructive effect on the infective organism. The edges of the incision become necrotic and the incision will not dry up until nature is able to get rid of the dead tissues. This is the reason why a cold electric knife cut takes a longer time to heal. The necrosis is produced both by heat coagulation and strength of the current.

Prof. Bayer of Germany introduced cupping as a local treatment to increase congestions, and thus augment nature's process. In ordinary cases they have some value, in diabetics the pressure exerted by the cup often causes extension in the area of inflammation. Where owing to the small opening, one or many, the pus does not flow out easily cupping is a useful method to get rid of the confined pus, if the patient refuses to have any operation or there is any contraindication. In uncomplicated cases cupping is good in all stages but in diabetics

it should be used with caution and should not be resorted to until localisation is completed, extension has ceased, openings have formed but from which pus is not adequately flowing out. In uncomplicated cases, if cupping increases pain, fever, and is causing the inflammation to spread, it should not be used.

Violet ray or diathermy is not always available. In such cases if there is breach of surface antivirus application proves beneficial. Antivirus on unbroken surface is of doubtful efficacy but certainly there is no harm in trying it. It is equally applicable in a small abscess when it has burst, or in carbuncle or other conditions where raw absorptive surface is persent. It must be borne in mind that large quantities of it applied over extensive areas may, by protein absorption produce anaphylactic phenomenon though extremely rarely and so proper safe-guard should be taken to prevent it.

Fever: An alkaline diaphoretic and diuretic mixture should be given to maintain the alkalinity of the blood which is sometimes lowered as a result of sepsis. By increasing the flow of the urine it helps in the elimination of the toxin. With diuretic mixture if copious drinks do not produce a free flow of urine, alimentary tract should receive attention. It is needless to repeat that the urine should be examined not only for sugar and albumen but to find if the sepsis is setting up any inflammation of the kidneys, or there is pre-existing defect or disease of that organ.

Bowels: Should be kept open with a suitable purgative or laxative. Castor oil is the best. When the patient is weak, the fever high and the toxaemia great, it is better to clear out the rectum with normal saline douche. Saline purgative should be used with caution. In highly toxaemic cases with good deal of temperature and certain amount of tympanitis calomel in divided doses with carminatives and alkalies followed by a mild saline purgative is often beneficial. The old school of practitioners used to rely on iron and quinine mixture to control fever and to exercise antiseptic effect on the system. Quinine in septic cases does not produce any impression on the temperature unless there is latent malaria in the system. Quinine in small doses may however be used for its tonic effect but when malaria is suspected to coexist with the infection quinine in adequate but cautious doses should be administered. Iron is of doubtful efficacy specially where the tongue is dry and coated. Balsham's mixture is a well tried old prescription which does not upset digestion and is a diuretic, besides it exhibits iron in a very mild form. Icthyol is generally used is surgical conditions but I have not been convinced about its efficacy. Serum is indicated where toxaemia is great and the temperature is high. To be of use it must be administered in adequate doses. Even in diabetics, and in people with damaged kidneys, with adequate care it can be freely pushed. A big dose may cause diminution of urine, or lead to anaphylaxis, or serum sickness. With improvement in the technic the fear of serum sickness now a days is practically nil. To increase the flow of the urine or as a prophylactic measure with that object rectal glucose with saline, or intravenous glucose may be administered provided the heart and arteries are good. When large doses of glucose are necessary, instead of pushing it in the muscles it is better to inject it on the outer side of the thigh under the fascia lata. As much as 50 c.c. of 12½% sol. of glucose can be pushed in on alternate sides morning and evening in selected cases where the indication is strong for its administration. Similarly 50 c.c. of 25% glucose colution can be given intravenously twice or more in 24 hours. Where there is a latent diabetes it is safer to administer Insulin with massive doses of glucose to enable the system to utilise the glucose without causing hyperglycaemia. Hyperglycaemia is undesirable in cases of sepsis and may prove very dangerous.

Vaccine: In suitable doses helps the system to control the infection and to bring about localisation. In strong robust patients without any constitutional defect and where the toxaemia is not great it matters little if the doses of vaccine are followed by a mild reaction. But in individuals with any systemic complication, or where the toxaemia is great, reaction is undesirable, as it may turn the scale against the patient. For this reason in such cases the dose of vaccine should be very small, so that reaction is not produced. Thus we get the benefit of vaccine if possible, and avoid all risk of a negative phase. Sometimes an injudicious dose of vaccine produces such a negative phase in a patient that it either increases the seriousness of the condition, or may even deprive him of a chance of recovery. Vaccine

of staphylococcus aureus is beneficial. Mixed staphylococcal stock vaccine can be used but is doubtful whether mixed staphylococcal vaccine is superior to a pure staphylo. aureus vaccine. The best is an autogenous vaccine.

Before concluding I cannot help touching on joint sepsis. If a joint is full of fluid and at the same time there is a temperature of varying degree the height of which gives an idea about the virulence of the organism, to rush with the knife is dangerous. I have seen several cases of death from injudicious operation and subsequent perfunctory treatment. A joint should not be allowed to remain distended for long. The fluid at first is serous which becomes turbid and then seropurulent and lastly purulent. Joint sepsis if neglected leads to permanant ankylosis. It should be aspirated at an early date before it begins to be turbid or when it has become turbid. Adequate treatment with vaccine will generally help and even serum is indicated in some cases.

When inspite of aspiration and adequate doses of vaccine, and necessary systemic treatment, the effusion is rapidly accumulating and getting more and more purulent the question arises of draining the joint. A drainage tube is not advocated by all. The best way to judge its use is by changing its position and size, and omitting it altogether and decide from the effect whether or not to use it. When however the serous effusion is just beginning to be turbid after aspiration a small quantity of chemotherapeutic dye solution may be left inside whilst general treatment indicated above is continued. Personally I have faith in 1 or 2% Gentian Violet in normal saline properly autoclaved.

If it does not prove of much value washing out the joint by two needles, through one of which sterile normal saline is introduced, and through the other the fluid is aspirated out, is an useful procedure; but after the washing a small quantity of a weak dye solution may better be left inside. If it does not prove efficacious, time should not be lost to have recourse to proper surgical procedure.

CURRENT MEDICAL LITERATURE

MEDICINE

Preliminary Pain in Coronary Thrombosis

FEIL (*American Journal of Medical Science*, January, 1937, page 42) in reporting on his study of 15 cases of coronary thrombosis with myocardial infarction in 14 observes that there is often a history of preliminary mild anginal pain preceding the clinical picture of thrombosis by hours or days—usually from 12 to 48 hours. This pain is continuous and of an oppressive and burning nature and is not precipitated by effort or emotion. The electrocardiograms taken during this preliminary pain were found to be normal in 2 out of 5 cases and the abnormalities found in other cases were described. The author contends that this pain is due to the gradual formation of thrombus in a stenosed coronary artery and all patients complaining of persistent retrosternal pain not dependent on effort, emotion or digestive trouble and having previous history of anginal attacks or hypertension should always be considered as suspects and efforts should be immediately made to improve the coronary artery flow.

Effect of Posture on Blood Pressure

LUTTERLOH (*American Journal of Medical Science*, January, 1937, page 87) reports on his study on the effects of posture on blood pressure in normal persons and persons with hypotension both primary

(with disturbed vasomotor mechanism) and secondary (post-infective). He observes that in normal and secondary hypotensive cases there is with change of posture a slight fall in systolic pressure, a definite rise in diastolic and a rise in the pulse rate but in primary hypotensive cases there is a decided fall in both systolic and diastolic pressure and only a slight rise in the pulse rate. He also suggests that there is a similarity between primary and postural hypotension.

The Clinical use of Diuretics

HAYMAN (*Journal of American Medical Association*, December, 12, 1936, page 1937) writes that diuretic drugs are adjuvants to other methods of treatment in removing oedema and in order that they may be effective there must be a certain degree of parenchymal integrity, a sufficient blood-pressure and an adequate blood flow in the kidney. Diuretics act either by increasing the volume of glomerular filtrate or decreasing the re-absorption of water in the tubules or both. Xanthine group acts by increasing glomerular filtrate through a rise in glomerular capillary pressure due to local vascular adjustments in the kidney. Digitalis acts by improving the action of the heart with consequent improvement in the renal blood flow and it produces little or no diuresis in healthy man. Diuresis produced by water, sugars, neutral salts *e.g.* pot. chloride or sodium sulphate and acidifying salts *e.g.* ammon. chloride or calcium chloride is in part due to temporary hydraemia with dilution of plasma protein and in part to the presence of the substances in high concentration in the filtrate interfering with tubular reabsorption. Mercurials act by diminished tubular reabsorption. Urea has probably a vasodilating effect causing an increase in glomerular capillary pressure and as urea is not actively absorbed by tubular epithelium it may interfere reabsorption of water in the tubules. The author maintains that diuretics have no value in acute nephritis and rarely in chronic glomerular nephritis. They are most useful in congestive heart failure when the patients are digitalised; mercurials will help in this diuresis produced by digitalis. In portal cirrhosis with ascites the regular use of mercurials may lessen the frequency of tapping. Nephrotic oedema responds more to ammon. chloride, or salyrgan or urea than to any other diuretics.

Diagnosis of Peripheral Vascular Disease

METCALF, PLANK AND RITTERSPACH (*Colorado Medicine*, January, 1937, page 20) give in the following tables the clinical classification of arterial vascular disease (Table I) and differential diagnosis of vascular disease affecting the extremeties (Table II).

TABLE I.

A. Functional or Vasomotor type	(i) Local distribution	1. Vasoconstricting type—Erythromelalgia. 2. Vasodilating type—Raynaud's Disease.
	(ii) General distribution	1. Vasoconstricting type—Primary or essential hypertension, early states. 2. Vasodilating type—Primary or essential hypertension, early.
B. Organic type	(i) Local distribution	1. Thrombo-Arteriosclerosis Obliterans. 2. Thrombo-Angiitis Obliterans. 3. Simple Thrombosis: embolism. 4. Arteriovenous communications (congenital, acquired). 5. Aneurism without or with thrombosis.
	(ii) General distribution	Arteriosclerosis. 1. Primary. 2. Secondary type, due to hypertension, lead and so forth.

TABLE II.

	THROMBO-ANGIITIS OBLITERANS.	ARTERIOSCLEROSIS OBLITERANS.	RAYNAUD'S DISEASE & SIMILAR CONDITIONS.	PRIMARY ERYTHROMELALGIA.
Age.	Between 25 and 45 years.	Between 55 and 85 years.	Between 17 and 35 years.	Between 30 and 50 years.
Sex.	Males 99%.	Males 90%.	Females 90%.	Females 70%.
Race.	Jewish 42%.	Any.	Any.	Any.
Pulsation of arteries.	Pulseless, 50% Diminished, 45%. Normal, 5%.	Pulseless, 50%. Diminished, 45%. Normal, 5%.	Normal.	Normal.
Excessive rubor with dependency.	Present.	Present.	Absent.	Absent.
Excessive pallor with elevation.	Present.	Present.	Absent.	Absent.
Claudication.	Usually present.	Usually present.	Absent.	Absent.
Gangrene.	Common.	Common.	Rare, of minor degree.	Never.
Rest pain.	Usually very severe.	Usually mild.	Usually Absent.	Mild to severe.
Type of rest pain.	Sharp, stinging.	Aching.	Absent.	Absent.
Appearance of gangrenous ulcers.	Most, inflamed, discharging.	Usually dry.	Small punched out areas.	None.
Superficial phlebits.	30% of cases.	Absent.	Absent.	Absent.
Roentgenogram of arteries.	Usually negative for sclerosis.	Usually positive for sclerosis.	Negative.	Negative.
Colour changes following exposure to cold.	30%	15 to 20%.	Always.	Never.
Temperatures of extremeties.	Low.	Low.	Low.	High during attacks.
Oedema.	Frequent.	Infrequent.	Absent.	Absent.

Heart in Vitamin Deficiency

RABINOWITZ AND ROGERS (*New England Journal of Medicine*, October, 1, 1936, page 621) report of a case of chronic avitaminosis in a four-year-old child showing serious affection of the heart which became quite normal following adequate treatment. The case showed extreme anaemia with haemorrhage round the gums, fever, muscular weakness and the following changes in the cardiovascular system, *viz.*, rapid, small and irregular pulse, markedly enlarged heart as evidenced by both clinical and radiological

examinations, low blowing systolic and diastolic murmurs in the mitral area transmitted to the axilla and back and a blowing diastolic murmur in the pulmonary area transmittted down the sternum. The child was put to bed and given a diet rich in vitamin C accompanied by liver, iron and a concentrated vitamin D and was discharged from the hospital after six months with no evidence of cardiac disease, the x-ray showing normal cardiac shadow.

Cardiovascular Effects of Benzedrine

ANDERSON AND SCOTT (*Lancet*, December, 19, 1936, page 1466) report 6 cases showing the untoward effects of benzedrine on the circulatory apparatus *eg.* collapse, multiple extrasytoles, heart-block, pain in the chest radiating into the left arm and they contend that the drug should be used with caution especially in elderly subjects until the cardiovascular effects of the drug are fully investigated.

Treatment of Glomerulonephritis by Antigen

DAY (*Lancet*, December, 19, 1936, page 1456) taking from Vollard and Fahr the conception of glomerulonephritis as a local and general vascular reaction of an allergic nature treated cases of glomerulonephritis of bacillary origin with autogenous vaccine and found out that the therapy is quite effective, that the effective dose is quite small in acute cases, that the response is almost immediate and that oral administration is as effective as hypodermic. The author further observes that the effect of urine extract on cases of glomerulonephritis of uncertain origin closely resembles the results of vaccine therapy in cases of bacillary origin and the mode of action appears to be identical and he contends that the urine extract contains a substance of the nature of an antigen. This treatment is useful in non-resolving cases of acute glomerulonephritis and for exacerbations or relapses in chronic forms of the disease and is useless in degenerative stage where fibrosis is advancing.

The Serum Treatment of Typhoid Fever

ROBERTSON AND YU (*British Medical Journal*, December, 5, 1936, page 1138) observe that of 52 Chinese patients treated with Lister Institute anti-typhoid serum 30 cases showed distinct improvement in the shape of a definite drop in temperature and a decrease in toxic symptoms, 7 cases showed reduction of toxaemia with no effect on the temperature curve and in the remaining 15 cases the serum did not produce any appreciable effect.

The Treatment of Peripheral Obliterative Arterial Disease

COLLENS AND WILENSKY (*Journal of American Medical Association*, December, 12, 1936, page 1460) treated by using intermittent venous occlusion 29 cases of peripheral obliterative arterial disease of which 5 were cases of thrombo-angiitis obliterans, 23 of arteriosclerosis obliterans and 1 of frost bite with gangrene. The authors note that this method of treatment relieved pains, healed ulcers and increased the walking capacity and the effects are produced because during the release of venous congestion an increase in arterial flow takes place depending on the degree and duration of venous congestion and the arterial flow is increased as a result of active vesodilation occurring in the arterioles. The authors further observe that the maximum increase in the flow in the limb takes place when kept under a pressure of 90 mm. mercury for 15 minutes, and they then described in detail the procedure adopted by them.

SURGERY

Prevention of Peritoneal Adhesions

OCHSNER AND STORCK (*Annals of Surgery*, October, 1936, page 736) observe that the introduction of a proteolytic enzyme in the form of papain solution into the peritoneal cavity after the division of adhesions is successful in preventing their reformation. This is very useful in those patients who have an adhesion diathesis or keloid tendency. This proteolytic action has been found effective both in experimental animals and in human beings. Of 122 patients on whom 317 operations were made 89% were treated with papain solution and of the 37 cases which required further operation 32 were found absolutely free from any adhesion though they showed on previous occasions massive adhesions.

Amoebiasis and Appendicitis

BANERJEE, CHOPRA AND RAY (*Indian Medical*

Gazette, December, 1936, page 693) give a review of the clinical study of 475 cases of appendicectomy and radiological study of 200 cases of appendicitis exclusive of cholecystitis. They observe that 5% of the cases had amoebiasis in association with appendicitis, that 45% of the patients gave a positive history of dysentery within 12 months, that 56% had emetine treatment before they were admitted into the hospital and that in 25 private patients where emetine was withheld before the operation scrapings of the appendicular mucosa showed cysts of Ent. histolytica in every case. Chronic amoebiasis, they note, was chracterized by marked pain over the caecum and hepatic flexure and slight pain on the sigmoid with some involvement of the liver, leucocytosis seldom exceeding 18,000 with eosinophilic count ranging between 5 to 10%. Sigmoidoscopy is a great help in diagnosis and they did it in 28 cases with good results. The authors note that diet has no bearing on the incidence of appendicitis. Of the radiological findings "sluggish appendix" is pathological, the local tenderness on the radiologically visualized appendix is very reliable and malformation of the base of the caecum after barium enema is also a valuable guide in the diagnosis of the disease. The Ochsner-Sherren method of treatment with emetine and an 'interval' appendicectomy gave them a mortality of only 0·25%. They found pericellulitis and appendicular abscess as complications of chronic amoebiasis.

Skeletal and Extra Skeletal Tuberculous Lesions Associated with Joint Tuberculosis

DUNCAN (*The Journal of Bone and Joint Surgery*, January, 1937, page 64) in reviewing 555 cases of joint tuberculosis observes that only 238 patients (43%) revealed no skeletal or extra-skeletal tuberculous lesion clinically or roentgenographically other than the joint lesion for which they were admitted, that pulmonary tuberculosis was present in 48% of the case—12% in active stage and 36% in inactive stage, that in 24% the tonsils were tuberculous, that the genito-urinary tract was involved in 2·5%, that 16% had 123 associated skeletal and non-skeletal lesions other than pulmonary disease and that the mortality rate was only 8%. The author maintains that operative fusion of the joints is at the present moment the best method of hastening and effecting a satisfactory cure. The main objections to this method of treatment are increased mortality and greater dissemination rates but the incidences of death and multiple lesions in his series are 8% and 16% respectively which are not really very high.

A Roentgenologic Study of 115 cases of Appendicectomy for so-called Chronic Appendicitis

FOLDMAN (*Radiology*. December, 1936, page 699) in reviewing the study of 115 cases of so-called chronic appendicitis who underwent appendicectomies without relief of their symptoms observes that a further thorough and painstaking roentgenologic investigation of the patients including examination of the gastro-intestinal tract, gall-bladder, colon and the genito-urinary tract (cystoscopic and pyelographic) revealed peptic ulcers in 36·5%, pathological gall-bladder in 26%, and genito-urinary tract involvement in 6% of the cases. He maintains that it is not a fact that tht x-ray diagnosis can be arrived at very easily nor is it a method of choice in the examination but the above study clearly shows how inadequate the preoperative investigations were and how helpful the roentgen investigations were in, at least, excluding the conditions which mimic appendiceal disease. The author contends that no operation for chronic appendicitis should be done until those conditions have been thoroughly ruled out.

The Incidence, Mortality, and Treatment of Gastric and Duodenal Ulcer

HURST AND RYLE (*Lancet*, January, 2, 1936, page 5) observes that the incidence of haemorrhage is about 30% in gastric and duodenal ulcer and 45% in anastomotic ulcer, that the mortality from haemorrhage in ulcer cases is about 1·5% in general practice. They further observe that as total mortality of all operations for gastric and duodenal ulcer is far greater than that from haemorrhages in all cases of ulcers and as haemorrhage is not rare after operations on patients with ulcer who have already bled it is clear that surgery cannot be regarded as a means of prophylaxis against fatal haemorrhage. There are some cases of bleeding ulcers who do not improve under medical treatment but the authors point out that these are the cases in which operative treatment of the bleeding points become impossible as post-operative mortality becomes extremely high even when the operation is

performed by an expert surgeon with preliminary transfusion of blood. The authors note that a very few of the cases require transfusion, that the vast majority of them require morphia, rest in bed, and starvation for 2 days and from the 3rd day onwards large doses of iron and ammonium citrate. They note that transfusion should not be done unless the haemoglobin value goes below 30%, that not more than 10 ounces of blood should be given at a time and that it should not be repeated unless haemorrhage recurs. They maintain that the low mortality from haemorrhage in gastric, duodenal and anastomotic ulcer can be made still lower if operation is limited to such rare cases where the source of bleeding is a large hole in a sclerotic vessel exposed at the base of the ulcer and if transfusion is done with all the precautions noted by them.

PATHOLOGY AND BACTERIOLOGY

Blood Cholesterol and Atherosclerosis

LANDE AND SPERRY (*Archives of Pathology*, September, 1936, page 301) write that the cholesterol content in the blood serum and lipide content of the intima of the aorta was made on necropsy material taken from persons who died suddenly mostly from automobile accidents. 123 cases with varying degree of atherosclerosis only were selected for study and this study shows that there is no correlation between the cholesterol concentration of the serum and the lipide content of the aorta even in subjects with marked degree of atherosclerosis. The average cholesterol value was found to be normal with variations ranging within normal limits. Jobling and Muker in the same issue of the journal report on and observe that rabbits fed with cholesterol for a period of 31 days in amounts sufficient to cause hypercholesteraemia failed to show atherosclerosis marked degree of atherosclerosis. The average tem were given in addition. These results clearly show that hypercholesteraemia is not an aetiological factor in the production of lesions characteristic of arteriosclerosis.

Carbohydrate Metabolism, Local Acidosis and Cytological Picture in Inflammation

MENKIN AND WARNER (*American Journal of Pathology*, January, 1937), investigated experimentally at different periods of acute inflammation the pH concentration, the total CO_2, lactic acid, and sugar contents of the cell-free exudate and also the cytological study of the exudate at the corresponding periods and found that as inflammation develops the carbon-dioxide content of the cell-free exudate progressively diminishes with accompanying increase in hydrogen-ion concentration and a concomittant shift in the cellular composition from polymorphonuclear to a mononuclear phagocytic phase. There is increased local glycolytic activity as evidenced by higher level of exudate lactic acid and lower concentration of exudate sugar. This glycolysis increases as inflammation progresses and is further helped by depletion of alkali reserve. There is thus a local disturbance of carbohydrate metabolism in acute inflammation and the amount of acidosis and glycolysis produced determines the cellular picture.

Diagnosis of Hodgkin's Disease

EMILE-WEIL, ISCH-WALL AND PERLEY (*Presse Med*, October, 1936, page 1540) observe that the biopsy of the gland is the only certain method of diagnosis and as an alternative they recommend the puncture of a gland which gives equally reliable results. Moreover several glands can be punctured simultaneously. The results obtained by gland puncture were corroborated by biopsy in 20 cases. Hodgkin's glands are characterised by the cellular nature and the type of cells met with *e.g.* Sternberg and endothelial cells. Four different types of enlargement are usually met with according to the preponderance of the cell element, *viz.*, one showing increase of mononuclears, another of eosinophiles, the third of polynuclears and the last of fibrous type. The gland puncture is not only of diagnostic aid but it also indicates the course of the disease and gauzes the results obtained by any therapeutic method employed.

OBSTETRICS AND GYNAECOLOGY

A Statistical Analysis of the Records of Primigravidas over 35 years of Age

ROEDER (*American Journal of Obstetrics and Gynaecology*, January, 1937, page 916) gives a statistical study of 113 cases of elderly primigravidas out

of 13,246 cases delivered in the Philadelphia Lying-In Hospital during the last six years and a half. Complication of pregnancy was present in 40·7% of which 50% had signs and symptoms referable to intoxication and the cardiovascular system. Labor was complicated in 27·4% of which persistent occipito-posterior positions and floating head at term accounted for 66% of those so classified. Puerperal complication occurred in 30·9% of which sapraemia, breast engorgement and postoperative reactions comprised the majority. The average duration of labour for the entire group was eleven hours. Delivery was spontaneous only in 8 cases, by forceps in 61; caesarian section was done in 28, internal podalic version in 10, breach extraction in 8 and extraction in a transverse position in 1—the total operative incidence was 92·9%. The maternal morbidity was 25·6% (5% more) and maternal mortality 1·76% (3 times as great) whereas foetal morbidity was 8·62% and foetal mortality 3·45% (1/3 great).

A Biologic Test for the Diagnosis of Intra Uterine Foetal Death

REZEK (*American Journal of Obstetrics and Gynaecology*, December, 1936, page 976) used Schneider modification of Aschheim-Zondek test to obtain the dead foetus reaction in a series of 86 cases and the test proved accurate in 95·3%. The test is as follows:—10 c.c. of a freshly voided morning specimen of urine after being filtered is injected into the marginal ear vein of 13 to 15 week old virgin female rabbit weighing between 4 and 5 lbs. From 40 to 48 hours the rabit is killed and if the ovaries when examined are found to contain mature follicles without any haemorrhage the test is said to be negative but the test is positive when the follicles contain peripheral haemorrhage and the diagnosis of intra-uterine foetal death may be made. The test is positive as long as living chorionic tissue is in contact with the maternal blood. In ectopic pregnancy the test is useful in as much as it determines the foetal death and further stoppage of growth giving one the information that the danger of rupture or abortion is decreased.

Ocular Troubles in Pregnancy

RENARD (*Gynaecology and Obstetrics*, November, 1936, page 337) mentions the following ocular troubles occurring in different stages of pregnancy. In the early part there occurs slight myopia, inversion of oculo-cardiac reflex (paresis of the 3rd nerve), pigmentation of the lids (thyroid) and bitemporal hemianopia (pituitary gland). In the later months neuroretinitis with haemorrhages and exudates occur and are due to toxaemia pregnancy. Sudden detachment of the retina often bilateral, scotomata, homonymous hemianopia and retro-bulbar neuritis also occur. During labour subconjunctival haemorrhage and pulsating exophthalmos and after delivery optic atrophy, retrobulbar neuritis and metastatic infections occur.

PEDIATRICS

Insulin like Reactions in Juvenile Diabetes Mellitus

FEINBLATT, BROOKLYN AND FERGUSON (*The Journal of Laboratory and Clinical Medicine*, December, 1936, page 249) observe that they found in 16 cases in a series of 40 cases of juvenile diabetes insulin-like reactions unassociated with hunger and unrelated to the amount of sugar or ketones in the urine or to the level of sugar in the blood. They varied from momentary lapse of consciousness to epileptiform convulsions. By routine examination the authors found the only abnormality in them *viz.* the definite alkaline tide in the urine and that acid producing diet proved remarkably effective in the relief of the symptoms as well as in removing the urinary abnormality. The reactions were not relieved by administration of sugar but they were stopped in some cases by the use of small doses of Fowler's solution.

Influenzal Meningitis

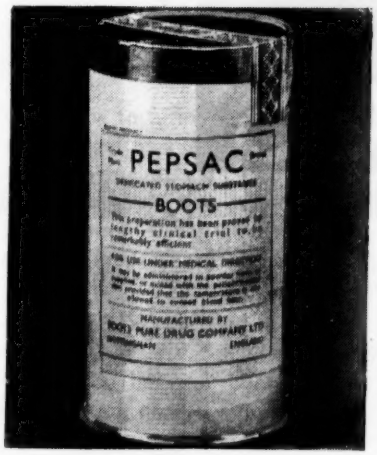
HUNTINGTON AND WILKE-WEISS (*Journal of Pediatrics*, October, 1936, page 449) report on the study of the clinical features of influenzal meningitis in children based on an analysis of 54 cases treated in the St. Louis Children's Hospital. They observe that of these 54 cases, 16 were females, 12 were over 2 years, that there were only 3 recoveries and the average duration of the disease was in the fatal

cases 14 days. In 10 cases otitis media and pneumonia preceded the onset of meningitis and the conventional meningeal symptoms were often absent, 16 of 20 blood cultures showed haemophylum influenzae on one or more cultures. The blood examination showed either leucopenia or leucocytois. The leucocyte count of the spinal fluid varied between 2 and 10 thousand with a high percentage of polymorphonuclear cells (the highest count recorded was 294,000 with 97% of polymorph cells). The staining of smears of spinal fluid revealed gram negative bacilli in all but 12 cases which again proved positive on second examinations. Spinal fluid culture was positive of haemophylum influenzae in 53 out of 54 cases.

Nasal Sinusitis in Childhood

CROOKS (*Archives of Diseases of Children*, November, 1936, page 281) from the investigations made at the Hospital for Sick Children, Great Ormond Street observes that nasal sinusitis in children is far more frequent and less likely to clear up spontaneously than is commonly believed. Of the antral punctures made on 100 children while undergoing tonsillectomy 24 showed pus and mucus and in only 9 (15%) of these the antra were clear at the end of 6 months. Of the antra that were without pus and mucus only half were sterile as also some of the antra with pus and mucus after six months. Pneumococcus was the organism frequently found. He also investigated on 76 children with clinical evidence of antral disease and observes that of these 76 cases 37 were cured, 35 by antral lavage and 2 by intranasal antrostomy, 26 were improved and 13 failed though 4 of them had antrostomy. Radiography in addition to proof-puncture is the most accurate means of diagnosis. He observes that nasal obstruction is quite frequent and "adenoid facies" is due more often to sinusitis than to adenoids and otitis media is often due to sinusitis which should always be suspected when the former is not relieved by the removal of adenoids. He further notes that sinusitis is a common cause of inflammation of the adenoids and to a lesser degree of the tonsils.

The Latest Treatment for PERNICIOUS ANAEMIA



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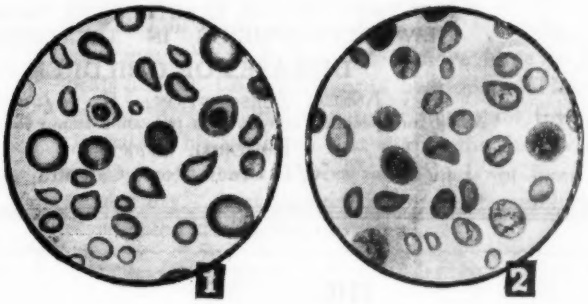
PEPSAC is a desiccated stomach powder for the treatment of Pernicious Anaemia, prepared from fresh, healthy hog's stomachs which have been subjected to critical veterinary inspection before use. Every stage of manufacture is controlled bacteriologically, and the desiccation is carried out under the most exacting conditions in order to preserve the haemopoietic principles of the stomach tissue.



1 BLOOD film from an untreated case of Pernicious Anaemia, showing anisocytosis, poikilocytosis, polychromasia and nucleated red cells.

2 BLOOD film from a case of Pernicious Anaemia after eight days' treatment with Pepsac, showing reticulocyte response. 32% of reticulocytes.

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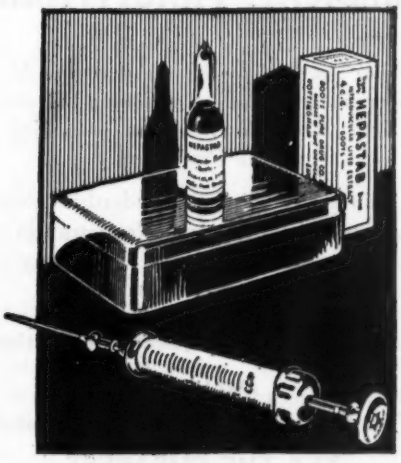

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ASSOCIATION NOTES

BENGAL PROVINCIAL BRANCH

ANNUAL REPORT.

For the period ending 30th September, 1936.

With a view to forming branches in the different districts of Bengal and to co-ordinate their activities, the Bengal Provincial Branch of the Indian Medical Association was started on June 29th, 1935, and the Executive Committee of the Calcutta Branch of I. M. A. was empowered to function provisionally as the Provincial Council till the formation of the Bengal Provincial Council.

The period from 29th June, 1935, to 30th September, 1935, has not been of special activity so far as formation of new branches was concerned. Two branches were only formed during this period —one at Barrackpore and the other at Darjeeling.

OCTOBER, 1935 TO SEPTEMBER, 1936.

In order to formally form the Bengal Provincial Council branches were asked to send in their nominations for the office-bearers, and at a meeting held on 18th October, 1935, the following were elected office-bearers of the Bengal Provincial Council for the year 1935-36:—

President—Col. K. K. Chatterji.
Vice-Presidents—Drs. J. N. Bose (Calcutta), Major T. H. Thomas (Darjeeling), G. P. Mitra Rai Bahadur (Dacca).
Secretaries—Drs. A. K. Sen (Calcutta), B. K. Ghosh (Barrackpore).
Asstt. Secretaries—Drs. Bolin Ghosh (Calcutta), Nani Lal Ghosh (Howrah).
Treasurer—Dr. A. K. Chakraverti.

ACTIVITIES.

The period opened with only 347 members:—

Calcutta Branch	...	251 members
Barrackpore Branch	...	11 ,,
Darjeeling Branch	...	18 ,,
Comilla Branch	...	10 ,,
Headquarters ...	...	57 ,,
TOTAL	...	347 members.

and closed with 464 members:—

Calcutta Branch	...	328 members
Barrackpore Branch	...	25 ,,
Darjeeling Branch	...	21 ,,
Comilla Branch	...	10 ,,
Dacca Branch ...	...	23 ,,
Faridpur Branch	...	19 ,,
Jalpaiguri Branch	...	11 ,,
Headquarters ...	...	27 ,,
TOTAL	...	464 members.

Though attempts were made to form branches in the different districts of Bengal, but during the period only three new branches were formed, *viz.*, at Faridpur, Jalpaiguri and Dacca. More than 100 new members were enlisted and we hope to form branches at Chandernagore, Serampore, Howrah, Barisal, Mymensingh and other important towns of Bengal. This indicates that during the first year of its existence, the progress made had not been unsatisfactory. A substantial increase of membership is expected during the next year.

PROVINCIAL COUNCIL MEETINGS.

There were two meetings of the Provincial Council during the period which were well attended.

At a meeting of the Provincial Council held on 16th August, 1936, a sub-committee consisting of the following members was formed to start branches in the important towns of Bengal:—

Drs. P. C. Rakshit, K. S. Ray, A. D. Mukherji, C. C. Basu, J. N. Bose, T. N. Ghosh, B. K. Ghosh (Barrackpore) and A. K. Sen (Convenor).

Another sub-committee consisting of the following members was formed to draft resolutions for submission at the forthcoming All-India Medical Conference to be held at Karachi during the ensuing Christmas holidays:—

Capt. P. B. Mukherji, Drs. S. C. Sen Gupta, K. S. Ray, A. D. Mukherji, T. N. Ghosh, P. C. Rakshit, B. K. Ghosh (Barrackpore) and A. K. Sen (Convenor).

The sub-committee met on two occasions and have submitted some draft resolutions for considerations at the next meeting of the Provincial Council.

At the request of the Faridpur District Branch, the Insurance Companies working in Bengal have been asked to provide us with their rates of fees for medical examination of their proponents, as it has been found that the fees paid by most of the Insurance Companies are not at all commensurate with the time and labour spent by medical examiners. These rates of fees will be placed before the next meeting of the Provincial Council for its information and necessary action.

Financial Position

The financial position of the Bengal Provincial Branch will be seen in the audited accounts submitted herewith.

A. K. Sen,
B. K. Ghosh,
Jt. Hony. Secretaries.

BENGAL PROVINCIAL BRANCH

Cash Receipts and Payments Accounts for the year ending 30th September, 1936.

Receipts			Payments			
To Opening Balance	131 0 0		By Postage	28 13 6		
,, Contribution & Subscription	912 12 0		Less recovered	1 11 0		
					27 2 6	
,, Contribution recd. in advance	3 0 0		,, Bank charges		1 8 0	
			,, Stationery		8 5 0	
			,, Book purchase		0 5 0	
			,, Entertainment		1 4 0	
			,, Printing		10 0 0	
			,, Contribution to Central Council		557 12 0	
			,, House rent		60 0 0	
			,, Cash & Bank Balances—			
			in hand	70 7 3		
			at bank	310 0 3		
					380 7 6	
	1046 12 0				1046 12 0	

Income & Expenditure Account for the year ending 30th September, 1936.

Expenditure		Income.	
To House rent	60 0 0	By Contribution and Subscription	1876 12 0
,, Postage	27 2 6		
,, Stationery	8 5 0		
,, Printing	10 0 0		
,, Entertainment	1 4 0		
,, Contribution to Central Council ...	1241 4 0		
,, Bank charges	1 8 0		
,, Balance being excess of Income over Expenditure	527 4 6		
	1876 12 0		1876 12 0

16th October, 1936.

Examined and found correct
For PAL & ROY,
Sd/- K. PALCHAUDHURI, M.A., A.C.A. (Lond.), R.A.
Chartered Accountant.

BENGAL PROVINCIAL BRANCH

Balance Sheet as at 30th September, 1936.

FUNDS AND LIABILITIES.				PROPERTY AND ASSETS.			
Contribution to Central Council :—				Books			0 5 0
For Calcutta Branch	571	0	0	Subscriptions and contributions in arrear :—			
Barrackpore ,, ...	50	0	0	For Calcutta Branch ...			856 8 0
Comilla ,, ...	62	8	0	Barrackpore ,, ...			25 0 0
Contribution received in advance	3	0	0	Comilla ,, ...			82 8 0
Association Fund	131	0	0	Cash & Bank Balances :—			
Add excess of income over expenditure ...	527	4	6	in hand	70	7	3
				at bank	310	0	3
							380 7 6
	1344	12	6				1344 12 6

We have examined the above Balance Sheet dated 30th September, 1936, of the Indian Medical Association, Bengal Provincial Branch, with the books and vouchers and find the same to be correctly stated.

For PAL & ROY,
Sd./- K. PALCHAUDHURI, M.A., A.C.A. (LOND.), R.A.
Chartered Accountant.

The 16th October, 1936.

BENGAL PROVINCIAL BRANCH

ACTUAL FOR 1935-36

INCOME			
Opening Balance	131	0	0
Contribution and Subscription	912	12	0
Contribution received in advance ...	3	0	0
	1046	12	0

EXPENDITURE			
Postage	27	2	6
Bank charges	1	8	0
Stationery	8	5	0
Book purchase	0	5	0
Entertainment	1	4	0
Printing	10	0	0
Contribution to Central Council	557	12	0
House rent	60	0	0
Closing Balance	380	7	6
	1046	12	0

PROPOSED BUDGET FOR 1936-37

INCOME			
Opening Balance	380	7	6
Expected realisation of arrear contribution ...	881	8	0
Expected realisation of contribution and subscription during current year ...	1281	0	0
	2542	15	6

EXPENDITURE			
Contribution payable to Central Council			
for 1935-36	621	0	0
for 1936-37	854	0	0
Postage	100	0	0
Bank charges	5	0	0
Stationery	50	0	0
Entertainment ...	50	0	0
Printing	50	0	0
House rent	150	0	0
Establishment	60	0	0
Propaganda	400	0	0
Expected surplus of income over expenditure	202	15	6
	2542	15	6

CALCUTTA BRANCH

ANNUAL REPORT

The Executive Committee may look upon the year 1935-36 with a reasonable measure of satisfaction as progress has been recorded in everything towards which the activities of the Association have been directed.

The year under review opened with only 251 members (excluding the members whose names have been transferred to Bengal Provincial Branch) and the number increased to 328 at the end of the session inspite of the loss of twenty members through resignation, death, default of subscription and other causes. Actually more than 97 members joined the branch during the current year, against 19 in the previous year. The net increase in membership has been about 31% which undoubtedly bespeaks of the increasing popularity of the Association among the members of the profession. The Committee takes this opportunity of according their sincere thanks to those members who were kind enough to introduce new members and hopes that others will follow their example and thus help to strengthen the representative character of the Association. An analysis of the membership register is given in the appendix (A). It may not be out of place to mention that at the beginning of the new session 45 new members have already joined this Calcutta Branch. This brings the total number to 373.

Executive Committee Meetings

The Executive Committee met thirteen times during the year. The meetings were all well attended and all the members took keen interest in the proceedings. The names of members who served as office-bearers and members of the Executive Committee are set forth in the appendix (B).

Social Activities

Three social functions were held during the year. An afternoon party was organised jointly with the Central Council on 5th December, 1935, to meet Major General Sir Frank Connor, KT., D.S.O., K.H.S., I.M.S., and members of the Research Workers' Conference. Dr. B. C. Roy welcomed the distinguished guests on behalf of the members of the Association and Sir Frank Connor in his reply reciprocated the sentiments expressed by Dr. Roy. The party which was well attended proved to be a great success.

The second social of the year was held on 30th May, 1936, when the President and the Executive Committee were at home to the members of the Association. More than hundred members attended the function and made it thoroughly enjoyable.

A Subscription Dinner was held at the Association on 30th September, 1936. Covers were laid for sixty persons which included members and their guests. The Committee thanks and congratulates Dr. M. U. Ahmad for the excellent arrangements made by him in this connection. The Committee hopes that such functions will prove much more popular in future.

The Committee regrets that owing to financial stringency the number of social functions held during the year were not many but with an expected increase of income they hope to add to this number in the new session.

Scientific Section

The activities of the Scientific Section were marked by a substantial increase as will be seen from the fact that 34 Clinical Meetings were held in the year under review against 11 only in the previous year—an increase of about 300%. Of these 34 meetings, 26 were ordinary clinical meetings which were held practically every Thursday except public holidays and the rest 8 formed a special course of Extension Lectures on Radiology delivered by some of the leading radiologists of the city, members as well as non-members. The attendance in both the clinical meetings and in the Radiology Extension Lectures was very satisfactory so much so that on at least some occasions all the sitting accommodation was filled up. All these lectures were open to the members of the medical profession. The subjects were varied and useful and the lecturers took great pains to make the lectures instructive as well as interesting. Discussions formed a regular feature of the ordinary clinical meetings in which most of the members present participated with great enthusiasm.

The Committee thinks that it would be failing in its duty if it does not convey its thanks to those gentlemen who kindly agreed to speak on these occasions and thus contributed to the success of the

Scientific Section which certainly forms the formidable pillar on which the popularity of the Association rests. In the coming session a further increase in the activities of this Section may be safely predicted, the fore-runner of which was a course of Extension Lectures on Diabetes (9 in number) held just before the Puja holidays. A detailed list of lectures appear in the appendix (C).

Indoor Game Section

Improvements of this Section were characterised by the addition of a Carrom Board and a Ping Pong Table. The latter proved a source of great attraction to a large number of members who turned up regularly every evening for play. Once again we take the opportunity of thanking our ex-President Col. K. K. Chatterji whose unfailing generosity provided us with the means of purchasing the Carrom Board and the Ping Pong Table. A competition in Ping Pong has been arranged and is in progress, and our thanks are due to Dr. A. C. Ukil who has kindly donated a sum of Rs. 25/- towards the cost of a trophy to be presented to the winner. We accord our thanks to Drs. A. K. Acharya, P. K. Sen, A. C. Banerji, S. K. Sen Gupta, N. K. Munshi and others who took a good deal of interest in the development of the Section.

Library and Reading Room

Want of funds proved to be the stumbling block in the development of the Library Section and the only books added during the year were those that were received through the courtesy of members who reviewed them for the Journal of I. M. A.

To remedy this state of affairs the Executive Committee at the recommendation of the Library Committee resolved (as an experimental measure) to levy a Library Fee of Rs. 3/- per annum or Re. 1/- per quarter from members who will take out books from the library and to devote the entire proceeds from this source to the purchase of books. The Reading Room, however, will remain free to all members as before. It is expected that the income from the Library Fee together with the small amount which has been provided in the ensuing budget for the purchase of books will go a long way towards giving a good start to our infant library. We hope to place a substantial order for the purchase of books early in 1937. We acknowledge, with thanks, a gift of books and periodicals from the following gentlemen:—

Drs. J. N. Bose, P. K. Acharya and Sarasi Lal Sarkar.

Other Activities

The Association was requested by the Bengal Council of Medical Registration to forward its suggestions for the revision of the Appendix to the Annual Medical List (Medical Ethics). The question was considered by a sub-committee the report of which after being passed by the Executive Committee was duly sent to the Bengal Council of Medical Registration.

The Association nominated Dr. K. K. Sen Gupta to the Mosquito Control Advisory Committee and Dr. T. N. Ghosh to the Advisory Board of the combined Commercial Museum and Health Publicity Section of the Calcutta Corporation.

Financial Position

The financial position of the Association at the end of the year, though far from satisfactory, shows definite signs of improvement. For the first time in 3 years the Balance Sheet shows a small surplus of income over expenditure. This year our liabilities to our creditors including our contribution to the Bengal Provincial Branch amounts to Rs. 1115/2/- against Rs. 1638/1/- the amount for the previous year. In this connection it may be mentioned that the annul contribution payable to the Central Fund (either in part or whole) as a liability has featured permanently in all the previous Balance Sheets. In the ensuing session with an increase of about 100 members (which has already taken place) effecting an increase of Rs. 1200/- in revenue we may hope to do away with this item from our future list of liabilities.

The total amount of subscription collected during the year was Rs. 3722/3/- against Rs. 2860/8/- in the previous year. If we deduct from this amount Rs. 324/- being the subscription paid in advance, we have still been able to increase the annual collection by Rs. 698/- the increase being almost entirely due to the addition of new members. A few remarks about the draft budget for the ensuing year seem to be necessary. It will be seen that this

budget shows a deficit of Rs. 356/-. However, we need not be unduly pessimistic about the situation. This draft budget has been calculated on the basis of a membership of three hundred only, but the actual membership figure to-day stands at 373. Assuming even that there will be no nett increase in the number of members during the rest of the year, if the measures of realisation of a subscription are energetic, the income should be more than enough to balance the proposed expenditure shown in the draft budget.

A word of explanation is perhaps needed to explain why only Rs. 400/- of the arrears has been shown as realisable in the budget, though the actual amount of arrears shown in the Balance Sheet is Rs. 950/8/-. The explanation will be found in the remarks of the Auditors who have pointed out that Rs. 397/8/- should be written off as irrecoverable as it represents arrears due from members who have resigned long ago or from members who are either deceased or untraceable.

Obituary

Many are the notable personalities who have been called away from our midst during the year and left us to mourn their irreparable loss. The foremost figure amongst them was our Beloved Majesty the King Emperor whose demise cast a pall of gloom over the whole world.

The Indian Medical Association was particularly unfortunate to lose in one single year two of its Presidents Col. Bhola Nauth and Dr. M. A. Ansari, both of whom made immense sacrifices in its cause. The latter's name will always be remembered as one of the greatest patriots India ever produced.

Sir Kedar Nath Das, KT., C.I.E., F.C.O.G. (Lond.), L.M.S. (Cal.), M.B. (Cal.), M.D. (Madras), was an unquestionable leader of the profession who secured for Bengal and India a place of honour in the world of Obstetrics and Gynaecology and the country is poorer to-day by his loss. His esteemed colleague Dr. N. N. Basu predeceased him by a few months. He was a Vice-President of the Bengal Branch of the Indian Medical Association. A renowned obstetrician and great teacher, he will always be remembered with love and esteem by his students as one who was an embodiment of the best dignities and traditions of the profession.

Col. Knowles was one of the guiding spirits of the School of Tropical Medicine and his sudden death has been a great blow to the cause of research in tropical medicine in this country.

Dr. Satyaranjan Sen was a well-known physician of Calcutta and was a member of this Association since 1929.

In the death of Dr. P. K. Acharya we have lost one of the oldest members of the profession, a charming personality who had genuine sympathy with the objects of this Association.

Acknowledgments

The Committee expresses its gratitude to the President, Dr. J. N. Bose, who kindly donated a sum of Rupees one hundred to the Entertainment Section of the Association. But for his generosity the activities of the social section would have been seriously handicapped.

The donations of Col. K. K. Chatterji and Dr. A. C. Ukil have considerably helped the Indoor Games Section and have already been referred to previously.

The Committee takes this opportunity of expressing its sincere appreciation and thanks to Messrs. Lily Biscuit Company for free supply of biscuits during the whole year which were served to the members with tea at the Clinical Meetings. The biscuits were of excellent quality and it can be unhesitatingly said that their products compare very favourably with those of the best foreign manufacturers.

Conclusion

It is indeed gratifying to note that the Indian Medical Association is making immense strides throughout the country and our branch as a component unit is taking its fair share in the progress and development of the Parent Body. We earnestly hope that our members by their sympathy and co-operation will help to maintain the traditions of the Calcutta Branch, which claims to be the largest branch of the Indian Medical Association.

T. N. Ghose,
Hony. Secretary

INDIAN MEDICAL ASSOCIATION

(CALCUTTA BRANCH)

Cash Receipts and Payments Account for the year ending 30th September, 1936.

RECEIPTS

	Rs.	a.	p.	Rs.	a.	p.
To Opening Balance—						
in hand	73	6	0			
at bank	241	1	3			
Less transferred to Bengal Provincial Branch Account ...	131	0	0			
				183	7	3
To Subscriptions—						
Arrears of 1935 realised ...				432	0	0
For 1935-36				2966	3	0
In advance for 1936-37 ...				324	0	0
,, Donations				176	4	0
,, Miscellaneous Receipts ...				29	9	0
,, Advance to Darwan realised ...				24	0	0
,, Library fee in advance ...				1	0	0
,, Sale proceeds of stationary ...				13	4	0
,, Received from Central Council and Journal—						
House rent				685	0	0
Telephone				115	2	0
Electricity				80	2	3
				5029	15	6

PAYMENTS

	Rs.	a.	p.	Rs.	a.	p.
By House rent				1800	0	
,, Telephone	225	15	0			
Less recd.	6	4	6			
				219	10	6
,, Electricity				181	4	0
,, Postage				216	8	3
,, Stationery				119	1	0
,, Furniture				79	14	0
,, Entertainment				90	1	3
,, Establishment				804	3	6
,, Advance to Darwan				35	0	0
,, Refund of subscription paid in excess				0	3	0
,, Printing				83	10	0
,, Audit fees				30	0	0
,, Contribution (arrear) ...				628	12	0
,, General charges				84	7	9
,, Bank charges				3	4	0
,, Social Gathering	197	8	3			
Less receipts	106	0	0			
				91	8	3
,, Telephone allowance ...				60	0	0
,, Cycle allowance				5	0	0
,, Furniture hire				20	2	0
,, Book purchase				3	0	0
,, Book-binding				10	9	0
,, Base coin				1	0	0
,, Cash & Bank balance—						
in hand	16	2	0			
at bank	446	11	0			
				462	13	0
				5029	15	6

Examined and found correct

For PAL & ROY

16th October, 1936

Sd. K. PALCHAUDHURI, M.A., A.C.A. (LOND.), R.A.
Chartered Accountant.

INDIAN MEDICAL ASSOCIATION

(CALCUTTA BRANCH)

Income and Expenditure Account for the year ending 30th September, 1936.

EXPENDITURE	Rs.	a.	p.	INCOME	Rs.	a.	p
To Establishment	796	3	6	By Subscription	3506	0	0
,, House rent	1440	0	0	,, Donation	176	4	0
,, Telephone	225	11	6	,, Miscellaneous Receipts	29	9	0
,, Postage	216	8	3	,, House rent recovered	660	0	0
,, Electricity	167	4	0	,, Telephone recovered	116	3	0
,, Printing	54	10	0	,, Electricity recovered	83	10	0
,, Stationery	119	1	0	,, Sale proceeds of stationery	13	4	0
,, Book-binding	10	9	0				
,, General charges	84	7	9				
,, Social Gathering	128	8	3				
,, Entertainment	90	1	3				
,, Audit fees	30	0	0				
,, Bank charges	3	4	0				
,, Hire of Furniture	20	2	0				
,, Contribution to Bengal Provincial Branch ...	856	8	0				
,, Telephone allowance	72	0	0				
,, Cycle allowance	6	0	0				
,, Base Coin	1	0	0				
,, Subscription remitted as per resolution ...	81	0	0				
,, Depreciation—							
Furniture at the rate 5%	38	4	9				
Instruments & Apparatus at the rate 5% ...	24	15	0				
Library at the rate 10%	75	11	6				
,, Balance—being excess of Income over Expenditure	43	0	3				
	4584	14	0		4584	14	0

Examined and found correct

For PAL & ROY

Sd. K. PALCHAUDHURI, M.A., A.C.A. (LOND.), R.A

Chartered Accountant

16th October, 1936.

INDIAN MEDICAL ASSOCIATION

(CALCUTTA BRANCH)

Balance Sheet as at 30th September, 1936.

FUNDS & LIABILITIES	Rs. a. p.	PROPERTY & ASSETS	Rs. a. p.	Rs. a. p.
Bengal Provincial Branch Contribution due for 1935-36	856 8 0	*Furniture*		
Subscription received in advance	324 0 0	As per last Balance Sheet ...	686 0 9	
Library Fee received in advance	1 0 0	Additions during year ...	79 14 0	
Sundry Creditors for Expenses—			765 14 9	
House rent	120 0 0	Less depreciation	38 4 9	727 10 0
Telephone	21 10 0	*Instruments and Apparatus*—		
Establishment	67 0 0	As per last Balance Sheet ...	498 5 0	
Telephone allowance	12 0 0	Less depreciation ...	24 15 0	473 6 0
Cycle allowance	1 0 0	*Library*—		
Social Function expenses	37 0 0	As per last Balance Sheet ...	754 2 3	
Association Fund—		Additions during year ...	3 0 0	
Balance as at 1st October, 1935	1935 15 9		757 2 3	
Add excess of Income over Expenditure ...	43 0 3	Less depreciation ...	75 11 6	681 6 9
		Advance to Darwan ...		11 0 0
		Subscriptions in arrear ...		950 8 0
		Due from Central Council & Journal for share of expenses—		
		Rent	75 0 0	
		Telephone	16 3 0	
		Electricity	21 3 3	112 6 3
		Cash and Bank Balances—		
		in hand	16 2 0	
		at bank	446 11 0	462 13 0
	3419 2 0			3419 2 0

We have examined the above Balance Sheet dated 30th September, 1936 of the Indian Medical Association, Calcutta Branch, with the books and vouchers and find the same to be correctly stated, subject to the remark that a sum of Rs. 397/8/- out of the outstanding subscriptions appears to be irrecoverable from members who are either dead, resigned or untraceable and should be written off.

For PAL & ROY
Sd. K. PALCHAUDHURI, M.A., A.C.A. (LOND.), R.A.
Chartered Accountant.

16th October, 1936.

INDIAN MEDICAL ASSOCIATION

(CALCUTTA BRANCH)

ACTUAL FOR 1935-36

Income :	Rs.	a.	p.
Opening Balance	183	7	3
Subscription	3722	3	0
Donation	176	4	0
Miscellaneous Receipts	29	9	0
Advance realised from Darwan ...	24	0	0
Library fee paid in advance	1	0	0
Sale proceeds of stationery	13	4	0
Received from Central Council and Journal—			
House rent	685	0	0
Telephone charges	115	2	0
Electric charges	80	2	3
	5029	15	6

Expenditure :			
House rent	1800	0	0
Telephone charges	219	10	6
Electric charges	181	4	0
Postage	216	8	3
Stationery	119	1	0
Furniture	79	14	0
Entertainment	90	1	3
Establishment	804	3	6
Advance to Darwan	35	0	0
Refund of subscription paid in excess ..	0	3	0
Printing	83	10	0
Audit fees	30	0	0
Contribution (1934-35)	628	12	0
General charges	84	7	9
Bank charges	3	4	0
Social Gathering	91	8	3
Telephone allowance	60	0	0
Cycle allowance	5	0	0
Furniture hire	20	2	0
Book purchase	3	0	0
Book-binding	10	9	0
Base Coin	1	0	0
Closing Balance	462	13	0
	5029	15	6

PROPOSED BUDGET FOR 1936-37

Income :	Rs.	a.	p
Opening Balance	462	13	0
Expected realisation of subscription from 300 members	3600	0	0
Expected realisation of arrear subscription ...	400	0	0
Expected donation	164	0	0
Expected receipt from Central Council & Journal—			
House rent	600	0	0
Telephone charges	125	0	0
Electric charges	80	0	0
do arrears	100	0	0
Expected receipt from Bengal Provincial Branch	60	0	0
	5591	13	0

Expenditure :			
House rent	1440	0	0
Telephone charges	250	0	0
Electric charge	160	0	0
Postage	250	0	0
Stationery	130	0	0
Furniture	100	0	0
Entertainment	150	0	0
Establishment	1000	0	0
Printing	100	0	0
Audit fees	30	0	0
Contribution (1935-36)	856	8	0
Contribution (1936-37)	900	0	0
Book purchase	300	0	0
Book-binding	20	0	0
Bank charges	5	0	0
Telephone allowance	144	0	0
Cycle allowance	12	5	0
General charges	100	5	0
	5947	13	0
Excess of expenditure over income ...	356	0	0

JALPAIGURI BRANCH

REPORT FOR THE YEAR ENDING SEPTEMBER, 1936.

Preisdent—Dr. Tarapada Sanyal, M.B.
Secretary—Dr.Sailesh Chandra Bhowmik, L.M.F
Treasurer—Dr. Abanidhar Guha Neogy, M.B.
Representative to Central Council—Dr. Suresh Chandra Sen Gupta.

Number of members on roll at the beginning of the year—Six.

Number of members on roll at the end of the year—Eleven.

Number of new members enrolled during the year—Five.

Amount contributable to the Central Fund under Rule 7 (b)—Rs. 33/-.

Amount contributed to the Central Fund—Rs. 33 in respect of—Eleven members.

ACTIVITIES OF THE BRANCH

Number of meetings held:
Clinical Meeting—One.
General Meetings—Eight.
Subject discussed—Typhoid and its prophylaxis.

This Branch fought in the interests of the local private registered medical practitioners in the nomination of a representative from the local private registered practitioners in the Managing Committee of the General Hospital, Jalpaiguri.

Statement of audited accounts showing the financial position of the Branch:

INCOME

Subscription from eleven members at the rate of Rs. 4/- per head ...	Rs.	44	0 0
Special contribution from four members	Rs.	4	0 0
Total		48	0 0

EXPENSES

Paid to the Central Council, through the Bengal Provincial Branch (in respect of 11 members) ...	Rs.	33	0 0
Expenses towards the General Meeting of the last year held on 1st December, 1935	Rs.	8	0 0
Printing charges	Rs.	1	8 0
Peon Book (one)	As.	0	10 0
Stationery	Rs.	1	0 3
M. O. Commission for sending subscription of members to the Bengal Provincial Branch ...	Rs.	0	6 0
Postage, etc.	Rs.	2	10 6
Balance in hand	Rs.	0	13 0
Total		48	0 0

* * * * *

Proceedings of the meeting of Jalpaiguri Branch of the Indian Medical Association held on 5-1-37.

Dr. Suresh Chandra Sen Gupta, L.M.S., President took the chair.

Members present:

Dr. G. Bhaduri, M.B., Khan Saheb Dr. Kabir Hossen, M.B., Drs. D. P. Dutta, M.B. (Cal.), M.R.C.P. (Edin.), D.P.H. (Lond.), and D.T.M. and H. (Lond.), Charu Chandra Sanyal, M.Sc. (Hony. Member), Saradendu Chatterjee, L.M.F., A. K. Bhowmik, L.M.F., S. Ghosh, L.M.F., M. Ahmad, L.M.F. and S. C. Bhowmik, L.M.F.

1. The proceedings of the last Annual General meeting of the branch held on 17-10-36 were read and confirmed.

2. Read the confidential circular from the Jnt. Hony. Secretary, I. M. A. dated 25th November, 1936 before the members.

Be it resolved that all members should abide by the circular and await further instruction on the point from the Central Council.

3. Dr. Charu Chandra Sanyal M.Sc. (Hony. Member) was then requested to read his paper on "Atypical Malaria of Cardiac Type". After he finished his paper there was a lively discussion on the subject. Dr. G. Bhaduri, Dr. D. P. Dutta and Dr. S. C. Bhowmik took active part in the discussion.

4. The necessity of a good permanent place for holding monthly meetings of the branch and also for holding clinical meetings etc. was pointed out by the Secretary of the Branch and it was resolved that the authorities of the following premises be

approached by the Secretary of this branch for permission to allow the Jalpaiguri Branch of I. M. A. to use the hall of their premises once a month in the evening for holding a meeting of the members of this branch and also of the local medical practitioners to discuss subjects of interest to the medical profession and local sanitation as well as exchange views amongst the local medical practitioners. The authorities to be approached are (a) the Secretary of the local Brahmo Samaj (b) the chairman of District Board (c) the chairman of Municipality (d) the Superintendent of the General Hospital Jalpaiguri for the Out-door clinical lecture theatre.

5. This association feels the necessity of the establishment of a medical club at Jalpaiguri to promote good feeling and to facilitate exchange of views amongst all the members of medical profession of this district and as such the opinion of all the medical practitioners of the district be invited over the matter by issuing a letter. It is to be mentioned here that the membership of the club is open to all medical practitioners who need not necessarily be members of the Jalpaiguri Branch of I. M. A. but the club will be under the control and management of this association.

6. Resolved that Drs. G. Bhaduri, Charu Chandra Sanyal, A. K. Bhowmik and M. Ahmed should form a Sub-Committee for ascertaining the views of all medical practitioners, forming rules and regulations and making all other preliminary arrangements for the establishment of the club. That the report of the Sub-Committee be placed before the next Ordinary meeting of this Branch.

S. C. BHOWMICK,
Jnt. Hony. Secretary.

DACCA BRANCH

ANNUAL REPORT

The idea of starting a Branch of the Indian Medical Association at Dacca was first mooted by some of the present members in the year 1932 with a view to safeguard the interest and improve the prestige and position of the medical profession. But it could not materialise for various reasons. It took shape, however, in the Dacca Medical Club premises as the result of a discussion by Dr. S. C. Sen Gupta, M.D., F.R.C.S. and others of Calcutta in which most of the local members of the Club took part. A lively discussion followed and finally on 23-6-35 it was decided in a meeting of the members of the medical profession in the Jagannath Intermediate College Hall to start a branch at Dacca. In that meeting a provisional Committee was formed to do the needful.

The following meetings were then held during the year under report:—

(1) Provisional Committee	...	4
(2) General Meeting ...	...	6
(3) Special Meeting ...	...	1
(4) Executive Committee Meeting	...	1
(5) Clinical Meeting ...	...	1
(6) Sub-Committee Meeting	...	2

At the start 36 gentlemen signified their assent to become members but ultimately only 23 members were enlisted on payment of full quota of subscriptions (Rs. 4/- per annum). Unfortunately for us one active member since died which we all deplore thus leaving total number of members to this day to be 22.

Although there are over 200 registered practitioners in Dacca city proper we could secure support of only 23 members. The reasons for such a small number are varied and various—prominent among them being the exclusive aloofness and apathy of the Government and *quasi* Government Service holders, Government pensioners, Municipal and District Board Service holders. Even some of the private practitioners of this city who are connected with Government institutions in an honorary capacity only (and their number is not insignificant) are keeping themselves at a considerable distance from the activities of the Association. The Government however, lifted the ban on their officers joining the Association by a circular order which was shown to the above mentioned officers but without any effect. From enquiries we find, however, that several I. M. S. & P. M. S. officers in other provinces are prominent members of the Association. Even the Darjeeling Branch has its president in an European I. M. S. officer. All honour to them. We are, however, still hoping to get their sympathy and support in near future. Our thanks are due to our President—a Government pensioner who had the courage of joining our Association at the very inception and took an active part.

Col. K. K. Chatterjee of Calcutta came here during the year under report and delivered a clinical lecture on Syphilis which was highly instructive and illuminating.

Dr. K. S. Ray, General Secretary attended one of the special meetings with some other Calcutta doctors and fully explained the aims and objects of the Association and the need for organisation among medical men.

Finance: Total receipts for the year was Rs. 108-4-0 from subscriptions and total expenditure under various heads amount to Rs. 81-8-0 thus leaving a balance of Rs. 26-12-0 out of which there are Rs. 24-12-0 with the Pioneer Bank and Rs. 2-0-0. Cash in hand.

Although the Branch worked for full one year it had to borrow rooms for the office and holding meetings as we could not take a room of our own for paucity of funds. Unless at least 50 members could be enlisted the branch cannot possibly get a room for office purposes. Our thanks are due to the authorities of the National Medical Institute for placing some furniture and a room at the disposal of the Secretaries. Our heartfelt thanks are also due to Rai S. N. Bhadra Bahadur Principal Jagannath Intermediate College for kindly lending his College Hall for holding meetings.

We cannot close this report without expressing our grateful thanks to the President, Vice-Presidents and members of the Executive committee for their help and co-operation.

We are looking forward for the day when more worthy secretaries will be found cheerfully taking up the responsibilities of the office and a full fledged office of the Association will be established with all its paraphernalia.

BALANCE SHEET, 1935-36

RECEIPTS

Subscriptions from members at the rate Rs. 4/- for 23 members ...	92	0	0
Subscriptions from members at the rate Rs. 1/4/- for 13 members ...	16	4	0
Total	108	4	0

EXPENDITURE

Annual Subscription for 19 members to Central office at the rate Rs. 3/- ...	57	0	0
Half-yearly Subscription for 4 members at the rate Rs. 1/8/-	6	0	0
Total	63	0	0
Postage	1	6	0
Printing and books etc.	5	13	6
Wages for bearer	7	3	6
Conveyance	1	9	0
Miscellaneous	2	8	0
Total	81	8	0
With Pioneer Bank (Dacca Branch) ...	24	12	0
Cash in hand	2	0	0
Grand Total	108	4	0

S. K. MITRA,
President.

N. BANERJI,
S. C. RAI,
Jt. Hony. Secretaries,
Dacca Branch.

* * * *

The Annual General Meeting of the Dacca Branch was held in the J. N. Inter. College premises at 6-30 P.M. on 25-1-37 Dr. K. Mitra, Vice-President presiding.

Present—Drs. S. K. Mitra, B.Sc., M.B. (Cal.), M.R.C.P. (Edin.), D.P.H. (Lond.), D.T.M. and H. (Eng.) M. L. Boral, L.M.P., D. N. Seal, L.M.F., C. H. De., L.M.P., A. M. Das, L.M.F., R. K. Banik, L.M.F., H. C. Ganguli, M.B., Capt. C. C. Das Gupta, M.B., Drs. K. L. Dutta, M.B., J. K. Sen Gupta, M.B., S. C. Ray, L.M.F. and N. Banerjee, M.B.

Proceedings of the last two meetings held on 3-11-36 and 8-1-37 were read and confirmed.

Resolved that the following gentlemen be elected office-bearers for 1936-37:

President—Dr. S. C. Gupta, L.M.S.

Vice-Presidents—Dr. S. K. Mitra, Capt. C. C. Das Gupta, Dr. M. L. Boral.

Joint Secretaries—Drs. N. Banerjee and S. C. Ray.
Jt. Asst. Secretaries—Drs. C. H. De. and D. N. Seal.
Treasurer—Dr. H. C. Ganguli.

Additional members to form the Executive Committee:
Drs. J. K. Sen Gupta, K. L. Datta, S. K. Sen, L. K. Sen, G. Azam and K. L. Saha.

Report of the unemployment subcommittee were read and adopted with the following amendment after recommendation No. 7 and every Municipality should insist on having death certificates from registered medical practitioners before—disposal of dead bodies.

Resolved that this branch of the Indian Medical Association, support the candidature of Dr. H. C. Ganguli, M.B., in the ensuing bye-election in the Bengal Council of Medical Registration.

After a vote of thanks to the chair the meeting terminated and members were treated to light refreshment.

N. BANERJI, *Jt. Hony. Secy.*
S. K. MITRA, *President.*

BARRACKPORE BRANCH

The Annual General Meeting of the Barrackpore Branch was held at 95, Hospital Road, Sudder Bazar, Barrackpore, on Sunday, the 6th December, 1936 at 6-30 P.M.

The following members were present: Drs. S. C. Bose, M. L. Mondal, S. N. Nandy, R. N. Mitra, N. C. Halder, B. K. Ghosh and C. C. Dutt.

Dr. S. C. Bose took the chair.

1. The minutes of the last General Meeting held on 20.10.35 was read and confirmed.
2. The report of the Secretary for the year ending 1935-36 was considered and adopted.
3. The account as submitted by the Treasurer was gone through and adopted.
4. The following were elected office bearers for the year 1936-37.

President—Dr. S. N. Nandy, L.M.S., D.P.H.
Vice-President—Dr. M. L. Mondal, L.M.P.
Secretary and Treasurer—Dr. B. K. Ghosh, M.B., D.T.M.
Auditor—Dr. G. C. Chatterjee, M.B.
Members of the Executive Committee—
Drs. S. C. Bose, L.M.P. (Barrackpore), R. N. Mitra, L.M.P. (Barrackpore), B. N. Mitra, M.B. (Panihati), M. M. Roy, M.B. (Ichapur), Capt. N. B. Aich, M.B., I.M.S. (Rtd.), Talpuker and Dr. N. C. Halder L.M.F. (Barrackpore).

It was further resolved that three will form a quorum of the Executive Committee.

5. Dr. S. N. Nandy was elected a representative to the Central Council.
6. Drs. R. N. Mitra, M. L. Mondal and N. B. Aich were elected representatives to the Bengal Provincial Council.
7. Under the head miscellaneous a letter from the Secretary, I. M. A. (Central) dated the 25th November, 1936 was read and the contents were noted.

With a vote of thanks to the chair the meeting dissolved.

B. K. GHOSH, *Secretary.*

* * * * *

REPORT FOR THE YEAR ENDING 1935-36
(APRIL, 1935 TO SEPTEMBER, 1936)

President—Dr. S. C. Bose, L.M.P.
Vice-President—Dr. M. L. Mondal, L.M.P.
Secretary and Treasurer—Dr. B. K. Ghosh, M.B., D.T.M.
Executive Committee Members—Drs. N. B. Aich, S. Nandy, B. N. Mitra and H. Banerjee.
Representative to Central Council—Dr. B. K. Ghosh.

Number of members on roll at the beginning of the year—11

Number of members on roll at the end of the year—25

Reduction of members: Resignations 1
Deaths Nil

Number of new members enrolled during the year—15

Amount contributable to the Central Fund under Rule 7(b) Rs. 91/8/-

Amount contributed to the Central Fund Rs. 66/8/-

Date of payment 30th September.

ACTIVITIES OF THE BRANCH

Number of meetings held—
Executive Committee 3.
General Meeting 4.
Clinical Meeting 1.
Name of Lecturer—Dr. S. Nandy.

ACCOUNTS.

From April, 1935 to September, 1936.

RECEIPTS.

	Rs.	As.	P.
Income from subscription	135	0	0
Interest on S. Bank	0	1	6
TOTAL ...	135	1	6

EXPENDITURE.

	Rs.	As.	P.
Contribution to I. M. A.	66	8	0
Printing	9	14	0
Stationery	2	12	0
Refreshment	10	8	0
Postage	3	0	0
Cash in S. Bank	31	1	6
Cash in hand	11	6	0
TOTAL ...	135	1	6

Audited and Found correct.
G. C. CHATTERJEE, M.B.
Auditor.

B. K. GHOSH,
Hony. Treasurer.
6-12-36.

FARIDPUR MEDICAL ASSOCIATION.

The following were elected office-bearers of the Faridpur Medical Association for 1936-37 at the Annual General Meeting held on 27-9-36 with Dr. A. K. Sircar, M.B., D.P.H., the District Health Officer in the chair.

President—Dr. Promode Lal Chowdhury, L.M.S.

Vice-President—Dr. Abhoy Kumar Sircar, M.B., D.P.H.

General Secretary—Dr. Satyaranjan Ghosh, B.Sc., M.B.

Joint Secretaries—Drs. Sudhanshu Shekhar Bhattacharjee, M.B. and Jogjiban Chatterjee, L.M.F.

Auditor—Dr. Hatemuddin Ahmed, B.A., M.B.

SAHARANPUR DISTRICT BRANCH

Proceedings of the Annual General Meeting held on the 29th September, 1936:

Members present:—Drs. H. C. Banerjee, I. N. Saxena, N. B. L. Mathur, K. L. Endley, M. N. Sen, R. N. Bagley, B. S. Gupta and J. N. Vaish.

1. The Secretary read the Annual Report for the period 1st October, 1935 to 30th September, 1936.

2. Annual statement of the accounts was placed before the house and passed.

3. Election of the office bearers for the year year 1936-37.

The following were elected unanimously:—

President—Dr. D. Bharadwaj L.R.C.P. & S.

Vice-president—Dr. I. N. Saxena, L.M.P., L.P.H.

Secretary—Dr. Nawal B. Lal Mathur, M.B., B.S.

Jt. Secretary—Dr. M. N. Sen, M.B.

Members of the Executive Committee—Drs. D. Bharadwaj, I. N. Saxena, N. B. L. Mathur, M. N. Sen, H. C. Banerjee, K. L. Endley, R. N. Bagley, B. S. Gupta and J. N. Vaish.

Representative, to the Central Council I. M. A., Dr. H. C. Banerjee.

Representative to the Provincial Council, Dr. I. N. Saxena.

Delegate to the U. P. Provincial Conference, Dr. H. Banerjee.

Annual Report

The Saharanpur District Branch of the Indian Medical Association was reorganised at a meeting of the medical practitioners of Saharanpur held on the 26th September, 1936 at the residence of Dr. K. L. Endley. The following office-bearers were elected for the year 1935-1936.

President—Dr. H. C. Banerjee.
Vice-president—Dr. K. L. Endley.
Secretary—Dr. R. N. Bagley.

Members of the Executive Committee—
Drs. H. C. Banerjee, K. L. Endley, Barkat Ali, I. N. Saxena, N. B. L. Mathur, J. N. Vaish and R. N. Bagley.

The Executive Committee authorised Dr. I. N. Saxena to represent the Saharanpur District Branch on the Provincial and Central Councils of the Indian Medical Association.

Out of the old members of this Branch only seven contributed to the funds of the Branch this year. Ten new members were enrolled during the year; thus the maximum strength of the Branch was seventeen. The names of three members were transfered to other branches. In the sad and tragic demise of Dr. A. P. Mathur, the Saharanpur Branch lost a very active worker and keen supporter of the cause of the medical profession. At the end of the year the membership extends to thirteen. Considering the number of qualified medical practioners at Saharanpur, this is a small number. It is hoped that the Branch will attract more members and the local medical practitioners will take more interest in problems concerning the profession.

The number of meetings held during the year 1935-1936 is as follows:—

Clinical meetings	...	...	7
General meetings	...	...	2
Executive Committee		...	5
Sub-committee	...	...	1

The Sub-committee framed the rules and bye-laws of the Saharanpur Branch which were subsequently approved at a general meeting. The routine and emergent work was usually carried on by the Executive Committee. The Executive Committee devoted its attention and care particularly to the following items in view of their importance to the medical profession:—

1. Poison Rules (as amended by the U. P. Government).
2. Representation of this Branch on the Executive Committee of the District Branch of the Red Cross Society.
3. Representation on the Public Health Committee of the Saharanpur Municipal Board.

An intensive agitation was carried on against the Poison Rules as amended by the U. P. Government. In this connection the Saharanpur Branch has to acknowledge the valuable help and guidance that it received from the U. P. Provincial Branch of the Indian Medical Association.

The Association was successful in securing a representation on the Executive Committee of the Indian Red Cross Society, Saharanpur Branch and Dr. I. N. Saxena was elected to represent the Saharanpur Branch of I. M. A. on that body.

The Municipal Board, Saharanpur agreed to co-opt a member of this Branch on its Public Health Committee. Dr. R. N. Bagley was nominated to work on the Public Health Committee.

In accordance with a resolution of the Saharanpur Branch the following members offered themselves to the Municipal Board for honorary work in connection with anti-plague measures at Saharanpur:—

Dr. M. N. Sen, Dr. N. B. L. Mathur, Dr. Maqsud Husain Khan and Dr. J. N. Vaish.

The Saharanpur Branch places on record its thankful appreciation of their spontaneous and generous support in this public cause.

It is a matter of regret that the members of the Saharanpur Municipal Board did not accede to a very reasonable proposal of the Saharanpur Branch, namely the question of an annual grant of Rs. 500 to be spent on beneficient public causes such as:—

1. Propaganda aganist epidemic diseases.
2. Diffusion of knowledge of preventible diseases.
3. Purchasing of medical and health books and

journals and placing them at a public library.

It is hoped that the Municipal Board, Saharanpur will give more attention towards the health problems of Saharanpur and will take up the above mentioned points more earnestly next year and find the requisite money for carrying them out.

Clinical Meetings:—These were usually well attended by the members as well as non-members. The lecturers with their subjects are noted below:—

Dr. Z. A: Khan, M.B., B.S.—Appendicitis.
Dr. H. C. Jain, L.M.P.,— Gonorrhœa.
Dr. J. N. Vaish, L.M.P.,—Trachoma.
Dr. M. N. Sen, M.B.—Tuberculosis.
Capt. D. P. Lambert, M.D., I.M.S.—Gastric Ulcer.
Dr. N. B. L. Mathur, M.B., B.S.—Ultraviolet Therapy.

Those present at these meetings took a keen interest in the discussion that followed the lectures. All the papers read at clinical meetings dealt with the practical side of the problems and invariably showed deep study and thoughtful care devoted in their preparation. This activity of the Branch in the clinical direction has been very useful and instructive.

At the time of reviewing the year's work it will not be out of place to mention some of the immediate needs of the Saharanpur Branch of I.M.A. It has not been possible to subscribe to medical journals out of the funds of the Association. The Branch does not also possess a library of its own. This can only be achieved if the funds are strengthened by means of generous donations from the members. With increasing work of the Association, more will have to be spent on the office establishment and allowance for the typist. It is also felt that a provision for holding social functions on suitable occasions be made. It is hoped that with more funds the yearly change in the office-bearers will be more effective and the work of the Association will be carried on with renewed vigour and energy.

The Saharanpur Branch is indebted to Doctors K. L. Endley, I. N. Saxena, J. N. Vaish, H. C. Banerjee and N. B. L. Mathur for their kind invitations for holding the meetings at their residences and for helping the Hony. Secretary in organising those meetings.

INCOME—

	Rs.	A.	P.
Donation	26	0	0
Subscriptions	86	4	0
Interest on Bank deposit ...	0	4	6
Total Rs.	112	8	6

EXPENDITURE—

	Rs.	A.	P.
Stationery & printing	9	7	6
Peon	6	0	0
Postage	4	5	6
To Central & Provincial Councils ...	48	0	0
Delegate's fee to Provincial Conference	2	0	0
Total Rs.	69	13	0

BALANCE—

Deposit with Bhugwandass Bank ...	40	4	6
Cash with Honorary Secretary ...	2	7	0
Total Rs.	42	11	6

Rupees forty-two annas eleven and pies six only.

R. N. BAGLEY,
Honorary Secretary.

MUZAFFARNAGAR BRANCH

ANNUAL REPORT

Secretary and Treasurer—Dr. S. Halder, L.M.S.

Executive Committee members—Drs. B. R. Garg, L.M.P., Safi Md. Faruqi, L.M.P. and Vishnu Dutt, M.B., B.S.

Representative to Central Council—Dr. S. Halder, L.M.S.

Number of members on roll at the beginning of the year—Ten.

Number of the members on roll at the end of the year—Ten.

Only one new member was enrolled during the year.

Amount contributed to the Central Fund (in respect of ten members)—Rs. 30/-.

Date of payment—6-4-36 through Provincial Branch, Meerut.

ACTIVITIES OF THE BRANCH

Number of meetings held:

Special Committee—One.
General Meetings—Nine.
Clinical Meetings—Eight.

Name of Lecturers—(1) Dr. R. S. Batra, M.B., B.S., (2) Dr. I. S. Gupta, M.B., B.S., D.P.H., (3) Dr. Balbir Narayan, M.B., B.S., (4) Dr. G. D. Sharma, L.M.F., (5) Dr. S. C. Sen, B.Sc., M.B., B.S., D.M.R.E. (CANTAB), (6) Dr. Safi Md. Faruqi, L.M.P., (7) Dr. Mrs. Tewari, L.M.P., (8) Dr. P. N. Mathur, Civil Surgeon.

Subjects discussed—(1) Malaria, (2) Responsibility of men in matters relating to maternity, (3) History of Viennese School of medicine, (4) Dyspepsia, (5) Medical Electricity, (6) Beri Beri, (7) Septic fever after delivery, (8) Bacteriophages and their therapeutic value.

Library:

Number of periodicals added during the year: (1) Indian Medical Gazette, (2) Practitioner, (3) Ars. Medici of Vienna.

Statement of audited accounts showing the financial position of the branch is given below:—

INCOME

	RS.	AS.	P.
Previous balance in hand on 10th September, 1935	70	9	3
Income from 10th September, 1935 to 31st December, 1935.	37	0	0
Income from January to March, 1936 ...	45	0	0
Income from April to June, 1936 ...	41	0	0
Income from July to September, 1936 ...	32	0	0
	225	9	3

EXPENDITURE

	RS.	AS.	P.
Price of Indian Medical Gazette ...	10	2	0
Contribution to Central Funds through Meerut Provincial Branch on 6-4-36 ...	30	0	0
Subscription of Lancet	33	6	3
Subscription of Ars Medici	11	4	0
Allowance to Servant for 9 months ...	9	0	0
Price of a rubber stamp	1	0	0
Stationery and Postage	3	10	9
	98	7	0
Balance in hand on 1-10-36 ...	127	2	3

* * * * *

At a meeting of the Muzaffarnagar Medical Association held on 28th November, 1936, the following were unanimously elected as office-bearers for the year 1936-37 commencing from 1st October, 1936.

Secretary—Dr. S. Halder, L.M.S.
Jt. Secretary—Dr. Safi Md. Faruqi, L.M.P.
Representative to the Provincial and Central Councils—Dr. S. Halder.
Auditor—Dr. Anand Prakash, M.B., B.S.
Members of the Executive Committee—Secretary, Joint Secretary, Drs. Baburam Garg, L.M.P., Kishori Lal, L.C.P.S. and G. D. Sharma, L.M.F.

S. HALDER, L.M.S.,
Honorary Secretary.

PATNA MEDICAL ASSOCIATION

BIHAR BRANCH

ANNUAL REPORT

President—Lt.-Col. A. N. Bose, I.M.S.
Vice-Presidents—Dr. E. Stilwell (Miss), Dr. Syed Ali Hassan.
Secretary—Rai Saheb Dr. K. N. Bagchi.
Financial Secretary—Dr. S. K. Chatterji.
Executive Committee Members—Drs. H. Hyder

Ali Khan, R. Saran, Ali Ahmad, S. N. Mazumdar, and Capt. P. B. Mukerji.

Representatives to Central Council—Drs. H. Hyderali Khan, T. N. Banerji.

Number of members on roll at the beginning of the year—73.

Number of members on roll at the end of the year—76.

Reduction of members: Resignations—10.

Number of new members enrolled during the year—13.

Amount contributable to the Central Fund under Rule 7(b)—Rs. 237/-.

ACTIVITIES OF THE BRANCH:

Number of meeting held:
Executive Committee—one.
General Meetings &
Clinical Meetings —nine

Names of Lecturers—Mrs. Edith Howe Martin, Prof. H. Hyderali Khan, Dr. A. R. Mehta, Dr. I. Santra, Dr. H. Ganguly, Dr. M. Sirkar, Prof. Abdul Hamid Siddique.

Subjects discussed—(1) Birth Control, (2) Freaks of Nature, (3) Tuberculosis Problem, (4) Leprosy, (6) Pleurisy, (6) Pelvic Inflammations.

Closing balance at the end of the year Rs. 1,560-3-0.

MEERUT BRANCH

ANNUAL REPORT

1-10-1935 to 30-9-1936.

The year under review has not been equal to other years as no special propaganda against Poison's Act was done due to the subject being taken up by the Provincial Branch of I.M.A. Moreover our seniors, well-tried, seasoned and experienced men left the work to us—raw young men. Even our executive this year was most inexperienced but for Dr. Caroli's presence.

I admit, I have not been successful—nay not even able to tread on the lines laid down by my predecessors; but a assure you I have tried my level best to keep abreast of the times. I hope, considering my inexperience, members will overlook my shortcomings.

Membership. Our membership has not gone down though several of our old members left us, but we were always keen to enlist new members coming to the station. We started with a membership of 46 and to-day we are closing with a membership of 48.

Meetings. We have been lucky as regards the meetings of the Asosciation. I frankly acknowledge, I had not to hanker after speakers this year. Whomsoever I approached he was most willing to help me—young and old alike. Our success under this head is chiefly due to two factors. The first and foremost of them is the co-operation of the members, and the second is the untiring zeal of my colleague Dr. S. B. Vyas. We had 12 general and 10 Executive Committee meetings in all. The following subjects were discussed in the general meetings:—

1. Clinical Evenings at the Cantonment General Hospital by Col. S. Smith.

2. Village Health Organization by Dr. Kashi Pershad D.P.H.

3. How to be a successful practitioner by Dr. Mrs. Tandon.

4. Chronic Otitis Media by Dr. S. K. Bharadwaj.

5. Regeneration in man by Dr. M. A. Ansari.

6. Abdominal Tuberculosis by Dr. J. L. Caroli.

7. Clinical Evening at L. P. Hospital by Dr. Sukh Dayal.

8. Short notes on 3 cases of Liver Abscess by Dr. Bhupal Singh.

9. Aid of Ophthalmoscope in General Medicine by Capt. K. N. Tandon.

10. Short notes on Retention of Urine by Dr. Hira Lal.

Attendance at the meetings throughout was fairly large as compared to the past.

Papers. The following papers were subscribed for the year:—

1. Indian Medical Gazette.
2. Calcutta Medical Journal.
3. Medical Bulletin.
4. Practitioner.
5. American Journal of Surgery.
6. Clinical Journal.
7. Medical Annual.
8. Bristol Journal of Surgery and Medicine.
9. Medical Press and Circular.
10. British Journal of Urology.
11. British Journal of Tuberculosis.
12. Lancet.
13. Tropical Diseases Bulletin.
14. Indian Medical Journal was presented by Dr. Vyas.

The circulation of papers had been very satisfactory till July, 1936. In August we had trouble with the peon and so we had to change him. Due to change of servants our circulation become faulty. I, therefore, sincerely regret the trouble caused to the members at the fag end of the year. In this connection I cannot refrain from thanking my right hand Dr. Vyas whose vigilant eyes never failed to detect stasis in circulation.

Library: 28 new volumes have been added to the library and an addendum to the catalogue has been issued accordingly. Less interest has been shown by the members this year in the library as only 205 volumes have taken out as against 249 of last year. I may add here, without prejudice that ours is essentially a profession of careful observation and study. I hope our members will take a keener interest in the library an institution which is a cause of envy for other associations. We are duty-bound to be grateful to the pioneers who established this institution, and it is for us all to keep the torch burning.

Finances: We have just balanced our budget. I cannot tell you better than the Balance-sheet that is before you all. I must add that year after year secretaries have been bringing to your notice the question of arrears. Our association depends upon your charity alone, and if you withdraw your help through oversight I assure you, you break the very foundation of your association and library. I hope, gentlemen, you will listen to my appeal, and pay off your arrears. We have an outstanding arrears of Rs. 228/4/- and we had to write off Rs. 121/6/-. One fact I deem it my duty to put before you, and it is this, that some of us do not care to sign in the register the amount they pay to the peon and so difficulty arises. Defalcation is possible and we had to dismiss our peon due to this cause. Under this head I will be failing in my duty if I do not thank my colleague Dr. Chaurasia. Quiet and unassuming, as he is, people had few hopes, but I assure you, he worked hard and never failed to pull me up, whenever I wanted to be extravagant.

Other activities: Besides the usual arrangements for circulation of magazines and Scientific Meetings, we had been fairly active. Our chief activities lay in establishing a Venereal Clinic in co-operation with the Municipal Board and renewal of the Government grant. Government has decided not to give us a grant this year, but has promised to consider the question *de novo* in March next. As regards the Venereal Clinic, I say it is not given to every body to reap the fruit of the seed he sows. The seed is sown, the tree is up and it is for the future Secretary to reap the fruit. The Municipality accepted the principle and made a grant, but the Chairman has not released the grant due to financial difficulties. He has, however, promised to release it at an early date and I hope before, long, we will have the Venereal Clinic an established fact. In this connexion I thank Dr. P. D. Gupta, our Health Officer for his yeomen work. We wanted to start a Consultation Bureau, but we dropped the question for the time being, as we thought it was rather premature. In the end of the year we took up the question of unemployment amongst medical men. We have appointed a Sub-committee that is looking into the question. Here I wish to point out that the Sub-committtee is not receiving your full co-operation and I appeal to you all to lend your fullest support to the Sub-committee to evolve something tangible for the good of the profession.

Before I close, I wish to lay before you that so far our Association has only catered for the mental needs to members. I think, it is time that we make a move onwards and establish a free outdoor dispensary. I assure you, once we start, we will get enough charities to finance the scheme. If our outdoor will succeed, we will start a hospital also. I put before you a skeleton scheme for a free out-

door. I have seen a free outdoor being managed by Jumana Mission at Allahabad. They have got 6 small rooms for medical attendants, a clerk and a compounder. The outdoor starts at 11-30 A.M. when people have finished their private practice. The clerk issues cards to the patients and the patients are sent to different rooms turn by turn. Each patient, as he is examined, puts something in the charity box and in this way they collect as much money as enables them to run the show. Patients get free medicines from the dispensary by spending a paltry sum of a pice or so by way of charity. We may have to put some initial expenses for the time being, but I am sure we will get much more than our initial expenses. The medical attendants of the dispensary meet once a week in their Committee room and discuss important cases or those cases who pay a certain fee to the Secretary for a full consultation of the attendants. The fee so collected is distributed amongst the members of the dispensary. This way they help themselves and their fellow practitioners. I think, this scheme or a modified form of it may be adopted by our Association. In the end I thank my colleagues and the members of the Executive Committee for the hearty co-operation they have given me throughout the year. I also thank Mr. Shiam Sunder Lal, Accountant, C.M.A., for auditing the accounts of our Association.

I thank you all for your patience and indulgence that you have shown me now and throughout the year.

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The following office-bearers were elected on 5-10-36 at the Annual General Meeting for 1936-37:

Secretary—Dr. Hira Lal, B.Sc., M.B., B.S.
Jt. Secretary—Dr. S. B. Vyas, D.T.M.
Financial Secretary—Dr. R. C. Chaurasia, L.M.F.
Members of the Executive Committee—Drs. Murari Lal, L.M.F., Baboo Lal, L.M.P., Sukh Dayal, M.B., F.R.C.S., (Mrs.) T. Jones and I. A. Khan.

Dr. Hira Lal, B.Sc., M.B., B.S., has been elected representative to the Central Council in place of Dr. S. N. Banerjee. Drs. Suraj Bal, and S. B. Vyas were elected representatives to this Provincial Council of I. M. A., U. P. Branch.

MEERUT BRANCH

Income and Expenditure Accounts for the year ending 30th September, 1936.

	Rs.	a.	p.		Rs.	a.	p.	Rs.	a.	p.
By Balance B. F.	0	1	6	To Postage Stamps	15	15	9			
,, Donation	49	0	0	,, Contingencies	31	8	6	47	8	3
,, Subscription	895	0	0	,, Periodicals				213	5	3
,, Miscellaneous Receipts	12	10	0	,, Furniture				5	8	0
,, Interest on P.O. S/B a/c	17	0	6	,, Stationery & Printing				2	13	3
				,, Refreshment & Parties				18	9	6
				,, Medical Library				455	0	0
				,, I. M. A.				135	0	0
				,, Balance transferred to Capital a/c ...				95	15	9
	973	12	0					973	12	0

Balance Sheet on 30th September, 1936.

ASSETS.				LIABILITIES.			
Cash—				*Capital Account*—			
	Rs.	a.	p. Rs. a. p.		Rs.	a.	p. Rs. a. p.
In Bank	807	11	10	Balance in Bank on 1-10-35 ...	810	11	4
In Hand	98	15	3	Balance on 30-9-36 transferred from Income & Expenditure a/c above	95	11	9
	906	11	1		906	11	1
			906 11 1				906 11 1

HIRA LAL, B.Sc., M.B., B.S.,
Honorary Secretary,
Medical Association, Meerut.

S. L. VAISH,
Auditor.

R. C. CHAURASIA, L.M.P.,
Financial Secretary,
Medical Association, Meerut.

The Garvie Medical Library, Meerut.

Income and Expenditure Account upto the year ending 30th September, 1936.

	Rs.	a.	p.		Rs.	a.	p.
By Subscription	14975	9	6	To Office Expenses a/c	362	4	6
,, Interest on S/B a/c	408	7	6	,, Pay of Establishment	1755	11	1
,, Interest on Fixed Deposit a/c and P. O. Cash Certificates	1784	10	6	,, Stationery & Printing	320	3	6
				,, Miscellaneous a/c	115	0	0
				,, Balance transferred to Capital a/c ...	14615	8	5
	17168	11	6		17168	11	6

Balance Sheet on 30th September, 1936.

Liabilities	Rs.	a.	p.	Rs.	a.	p.	Assets	Rs.	a.	p.	Rs.	a.	p.
Capital Account—							*Stock—*						
Balance on 1-10-1936 ...	14615	8	5				Furniture	738	14	9			
				14615	8	5	Books	7828	10	0			
							Building	397	2	6			
											8963	11	3
							Cash—						
							P. O. Cash Certificates ...	3877	8	0			
							Allahabad S/B Account ...	1772	13	0			
							In hand	1	8	2			
											5651	13	2
				14615	8	5					14615	8	5

Hira Lal, B.Sc., M.B., B.S.,
Honoray Secretary,
Medical Association, Meerut.

S. L. Vaish,
Auditor.

R. C. Chaurasia, L.M.P.,
Financial Secretary,
Medical Association, Meerut.

Income and Expenditure Account for the year ending 30th September, 1936.

	Rs.	a.	p.		Rs.	a.	p.
By Subscription	467	1	6	To Office Expenses.	55	2	
,, Interest on Allahabad Saving Bank a/c ...	30	9	9	,, Pay of Establishment	293	8	
,, Interest on Cash Certificates (Postal) ...	137	8	0	,, Stationery & Printing	36	9	0
				,, Books	106	8	
				,, Balance transferred to Capital a/c ...	143	7	6
	635	3	3		635	3	3

Balance Sheet on 30th September, 1936.

Liabilities	Rs.	a.	p.	Rs.	a.	p.	Assets	Rs.	a.	p.	Rs.	a.	p
Capital Account—							*Cash—*						
Balance on 1-10-1935 ...	5508	5	8				P. O. Cash Certificates ...	3877	8	0			
Balance on 30-9-1936 transferred from Income and Expenditure account above ...	143	7	6				Allahabad Savings Bank a/c	1772	13	0			
							In hand	1	8	2			
				5651	13	2					5651	13	2
				5651	13	2					5651	13	2

Hira Lal, B.Sc., M.B., B.S.,
Honorary Secretary,
Medical Association, Meerut.

S. L. Vaish,
Auditor.

R. C. Chaurasia, L.M.P.,
Financial Secretary,
Medical Association, Meerut.